

BIPINNATE LEGUMINOSAE OF NICARAGUA

Frank C. Seymour

Research Associate, Missouri Botanical Garden
 Visiting Associate Research Professor, University of Florida

This is the article which I wish someone else had written before me so that I might have used it in identifying my specimens from Nicaragua.

Since the Leguminosae are classified largely by flowering characters such as the number of stamens and the regularity or irregularity of the corolla, it is natural that such characters are used largely in keys for identification. When, however, one has a specimen in fruit, he is under the necessity of wading through a host of descriptions and then hunting for a number of scattered sources to make sure that some recent species has not been overlooked. Not only to report the species found in Nicaragua by my companions and myself, but to gather together scattered information from these sources and to organize it in the form best adapted to fruiting specimens is the purpose of this article. It is hoped to save others the time-consuming process just described.

In view of possible extensions of range, species of Central America are included which at present are not known to occur in Nicaragua.

Such a project meets with special problems. First, in this group, more than in most families, characters frequently cross generic lines. This aspect is enlarged upon by the authors of the Flora of Panama (Ann. Mo. Bot. Garden 37: 226. 1950). Two species of the same genus may differ more than two species of different genera. Mimosa albida Humboldt & Bonpland can easily be mistaken for a Pithecellobium. Acacia pennatula (Schlechtendal & Chamisso) Benth can easily be confused with Lysiloma multifoliolatum Britton & Rose. In view of this situation, it is advisable for practical purposes to construct one composite key making use of vegetative characters in identifications.

Secondly, in no less than 13 species of bipinnate legumes of Central America, fruit is unknown. Perhaps no one would ever look for such species in a key for fruiting specimens. Yet they ought not to be omitted. In some cases they can be identified by the following key. The limitation of the use of characters by species in which fruit is unknown has some compensation in the

fact that vegetative characters are very useful and in some cases help to identify sterile specimens.

The species of bipinnate legumes for which fruit is unknown are an intriguing subject for investigation and study. It may be that they are sterile hybrids. Maybe they will never fruit. But that is a rash statement; anything can happen. Plants which are apparently sterile may be fertile under some circumstances. It may be that a specimen in fruit will be collected sometime. Does Celastrus scandens L. suggest a parallel? In New England, it often occurs in sterile condition in areas where a fruiting specimen has rarely or never been collected. This appears to be the case in the fringes of its range. This is my personal observation. It may be that in the fringes of its range weather conditions are only rarely favorable to its fruiting. That weather, such as a late frost, does affect fruiting is well known to fruit-growers.

Another parallel is suggested by Podocarpus sp. which is commonly cultivated in Florida. Plants of this species growing on my own property in Gainesville, for instance, have blossomed and fruited in only one of the seven years during which I have watched them. Since every year the weather differs from every other year, it may be that a season favorable to fruiting occurs only rarely.

Alpinia sp., likewise growing on my own property, has done the same thing. In just one year of the seven during which I have observed it, it has blossomed. The two species did not blossom in the same year. Can similar causes be operating in the bipinnate legumes in Nicaragua for which no fruit is known? Was no collector present to get specimens during the year in which they fruited? Can some of these plants be slipped and grown under controlled conditions so that the effect of weather and other possible factors can be observed?

Of the three subfamilies of Leguminosae, in a broad sense, two include bipinnate species; such species are not known in the Papilionoideae. Subfamily Mimosoideae consists largely of bipinnate species. Exceptions are Inga, a large genus in which almost all species have simply pinnate leaves; and in Pithecellobium 3 species have once-pinnate leaves, namely, P. membranaceum (Bentham) Schery, P. rufescens (Bentham) Pittier and P. tubuliferum Pittier. While most species of Acacia have bipinnate leaves, in A. neriifolia M. Cunn. leaves are reduced to phyllodia, that is, reduced to petioles so that they appear to be undivided.

Subfamily Caesalpinoideae is represented in Central America by only 5 genera with bipinnate leaves, namely, Caesalpinia, Delonix, Parkinsonia, Peltophorum and Schizolobium. Cerci-

dium does not surely occur. Haematoxylon has species with bipinnate leaves, but the species which occur in Central America are once pinnate.

I wish to express my thanks to the following persons for various kinds of assistance in preparing this article. Dr. Reed C. Rollins, then Director of the Gray Herbarium and Dr. Richard A. Howard, then Director of the Arnold Arboretum, for the privilege of studying and examining thousands of specimens in their respective institutions. Mr. Ray Angelo for examining specimens in the Harvard Herbaria and sending me information. Dr. Lyman B. Smith and Dr. David B. Lellinger, by whose courtesy I have been enabled to make use of the facilities and examine specimens in the United States National Herbarium. Miss Melissa P. Marshall who assisted me in citing specimens in the Harvard Herbaria. Mr. John T. Atwood, Jr., for citations from the Herbarium of the Michigan State University and the Florida State University. Dr. Silvio Echavery B., Director of the Escuela Nacional de Agricultura y Ganaderia in Managua who has provided hospitality to my companions and me while collecting and preparing specimens and with whom a set of specimens has been deposited. Dr. Jaime Incer and Mr. David A. Neill who made the facilities of the Universidad Centroamericana in Managua available to my companions and me for pressing and preparing specimens, with whom likewise a set of specimens has been deposited. Dr. Daniel B. Ward and Dr. Walter Judd and the staff of the Herbarium of the University of Florida. A set of specimens collected while using their facilities has been deposited with the University of Florida. Miss Sue Heine, the artist who drew the excellent illustrations for this article. Dr. L. C. Anderson, Director of the Herbarium of the Florida State University for the loan of specimens.

ARTIFICIAL KEY TO BIPINNATE LEGUMINOSAE OF NICARAGUA AND OTHER CENTRAL AMERICAN COUNTRIES

The long vertical line in the left margin indicates species with one pair of pinnae on a leaf.

- A. Legume jointed, usually flat; joints separating in maturity, sometimes leaving persistent margins B.
- B. Legume 4-15 mm wide; see p.25 for key
- many species of Mimosa
- B. Legume 20-100 mm (2 -10 cm) wide; woody vine C.

- C. Legume 2-2.5 cm wide; leaflets 3-6 pairs on a pinna, 1-5 cm long; twigs, petioles and axis of leaves with dense recurved prickles; p. 4) . Entada patens (Hook. & Arn.) Stan.
- C. Legume 5-10 cm wide; stem and leaves without prickles D.
- D. Leaflets 3-6 pairs, usually 4-5 pairs; legume very large 1-2 m long, 8-10 cm wide; leaves often with tendrils; p. 40 Entada gigas (L.) Fawcett & Rendle
- D. Leaflets (5-)6-8 pairs; legume 20-40 cm long, 5-8 cm wide; leaves seldom with tendrils; p. 40, illustr. 62 Entada polystachya (L.) DC.
- A. Legume not jointed or unknown E.
- E. Pinnae 2 (1 pair), no more on any leaf F.
- F. Spines at nodes only, usually in pairs G.
- G. Leaflets 0.4-1.8 cm long; legume gradually narrowed to base (attenuate); petiole 4-10 mm long, without glands H.
- H. Leaflets 8-18 mm long, 3 mm wide; legume up to 14 cm long, 10 mm wide, pubescent when young; p. 38 Calliandra Magdalenae (Bert.) Bth.
- H. Leaflets 4-6 mm long, acute or obtuse I.
- I. Legume glabrous, 6-8 mm long, 7-8 mm wide; leaflets 5-6 mm long, about 1 mm wide; p. 36 Calliandra Caeciliae Harms
- I. Legume densely villous; leaflets 4-6 mm long; p. 39 Calliandra Wendlandii Bth.
- G. Leaflets 2-13 cm long, glabrous above J.
- J. Leaflets 4-5 cm wide, 8-11 cm long, glabrous, acuminate; veins reticulate; p. 49 Pithecellobium hondurense B. & R.
- J. Leaflets 1.5-2.5 cm wide K.
- K. Leaflets hairy above and beneath; petiole 1.5-2.5 cm long, densely hirtellous; leaflets 2.5-4.5 cm long, 1.5-2.5 cm wide; flowers in spikes; legume unknown; p. 52 . . Pithecellobium saxosum St. & St.
- K. Leaflets glabrous or nearly so above, sometimes hairy in axils of veins beneath, otherwise glabrous L.
- L. Legume tomentose; leaflets 6-13 cm long, 2-5 cm wide, some of them gradually narrowed to acute tip; veins not conspicuous beneath; legume compressed; seeds black; p. 49 Pithecellobium hymenaefolium (H. & B.) Bth.
- L. Legume glabrous or nearly so, or hairy, not tomentose M.

- M. Legume terete or almost terete, almost straight to much curved or coiled; leaflets 2-7 cm long N.
- N. Leaflets hirsute beneath, at least on veins; veins raised, conspicuous beneath; twigs hirsute; leaflets 3-7 cm long; flowers in head-like spikes; p. 50 . . .
 Pithecellobium Johansenii Stan.
- N. Leaflets glabrous or nearly so; legume straight or curved, glabrous; seeds black; flowers in spikes; spines at nodes O.
- O. Legume 8-12 cm long, 1 cm wide, almost straight or curved, glabrous, indented or depressed between seeds; leaflets 2-7 cm long; p. 50, illustr. 62 . . Pithecellobium lanceolatum (H. & B.) Stan.
- O. Legume 6-8 cm long, 1.5-2 cm thick; veins not raised; leaflets 3-7 cm long; p. 50, 51
 Pithecellobium pachypus Pittier
- M. Legume compressed; flowers are needed to distinguish the 4 species immediately following P.
- P. Flowers in spikes Q.
- Q. Gland of petiole columnar; twigs puberulent or hirtellous or nearly glabrous; legume nearly glabrous, on short stipe, 1 cm wide; peduncles usually 1-3 cm long; leaflets 6 cm long; p. 51.
 Pithecellobium oblongum Bth.
- Q. Gland of petiole small, not columnar; twigs puberulent or glabrate; legume glabrous or nearly so, 1.5-2 cm wide; leaflets 3-12 cm long; p. 49. . .
 Pithecellobium insigne Miceli
- P. Flowers in heads; twigs glabrous or nearly so; gland of petiole circular, at summit; legume 8-15 mm wide; peduncle less than 2 cm long; leaflets 3-7 cm long R.
- R. Leaflets with texture of writing paper (chartaceous); spines at nodes; p. 48, illustr. 60
 Pithecellobium dulce (Roxb.) Bth.
- R. Leaflets leathery (coriaceous); spines at nodes or sometimes lacking; p. 50.
 Pithecellobium keyense Britton
- F. Spines none S. cp. p. 4
- S. Legume much curved, 8-15 mm wide T.
- T. Legume 8-10 mm wide, much curved; leaflets 3 or 4 rarely 2 on a pinna, 4-9 cm long; petiole short or almost none; legume not narrowed between seeds; p. 51, 52 Pithecellobium Recordii (B. & R.) Stan.

- T. Legume 12-15 mm wide, much curved almost into a circle, narrowed between seeds; leaflets 4-6 on a pinna (2-3 pairs), glabrous; lower leaflets slightly smaller than terminal ones; terminal leaflets 5-15 cm long; p. 52
 Pithecellobium racemiflorum D. S.
- S. Legume straight or slightly curved or unknown U.
- U. Terminal leaflets 9-20 cm long, 3-7.5 cm wide, much larger than basal pair; petiole up to 6 cm long V.
- V. Young twigs with reddish hairs, later glabrate; petiole less than 6 cm long; glands on axis of leaves between each pair of pinnae; peduncles 2-24 cm long; legume narrowed between seeds; valves twisted when open W.
- W. Leaflets 2-5 (usually 3) pairs on a pinna, acuminate, glabrous; petiole less than 1 cm long; legume about 10 cm long; gland between terminal pair of pinnae; peduncles up to 7 cm long, usually 2-3 cm long; p. 53
 Pithecellobium Valerioi (B. & R.) Stan.
- W. Leaflets 4-6 pairs on a pinna; petiole 2-6 cm long; peduncles 8-24 cm long; legume 8-20 cm long, 5-7.5 cm wide, tomentose, on short stipe; p. 48
 Pithecellobium catenatum D. S.
- V. Young twigs glabrous or almost glabrous; leaflets 6 or 7 pairs on a pinna; peduncles 1-3 cm long or shorter X.
- X. Flowers borne laterally on old wood of thick branches or at leafless nodes; leaflets glabrous Y.
- Y. Flowers on pedicels; pedicels 4 mm long; legume unknown; leaflets 6 (3 pairs), 9-14 cm long, 3-6.5 cm wide, on short petiolules, glabrous; side-veins prominent; p. 48.
 Pithecellobium Brenezii Stan.
- Y. Flowers sessile; leaflets 4-6; terminal leaflets 9-20 cm long Z.
- Z. Leaflets 6-9 cm wide; legume 11-18 cm long, 2-3.5 cm wide, glabrous; petiole short or almost none; p. 47 Pithecellobium bejizense Stan.
- Z. Leaflets 4-5 cm wide; legume about 12 cm long, densely ferruginous-tomentulose; p. 53
Pithecellobium Stevensonii (Stan.) St. & St.
- X. Flowers at ends of twigs or near axils of leaves Aa.
- Aa. Leaflets 6 or 7 on a pinna, 3-13 cm long, 1.5-4.5 cm wide, sessile, scarcely 3 times as long as wide, leathery (coriaceous); veins prominent, with 6 or 7 short spreading veins on one side, on the other side, one of the 3 veins long, arched, ascending; leaves almost sessile; p. 39, illustr. 60
Calliandra rhodocephala D. S.

- Aa. Leaflets 3-5 on a pinna Ab.
- Ab. Leaflets 3 on a pinna, with 7-8 short spreading side-veins on each side; terminal leaflets about 4 times as long as wide, 4-12 cm long, 1.5-3.5 cm wide; petiole 3-10 mm long; p. 52 Pithecellobium longifolium (H. & B.) Stan.
- Ab. Leaflets 3-5 on a pinna; terminal leaflets about 2 times as long as wide, 5-15 cm long, 1.5-6 cm wide, 7-9 52 short spreading veins on each side; p. 50, illustr. 60 Pithecellobium latifolium (L.) Bth.
- Ü. Terminal leaflets 1-5.5 cm long, not much larger than basal ones, that is, not twice as long Ac. cp. p. 6
- Ac. Legume gradually narrowed to base, widest near tip, obtuse or rounded and sometimes apiculate at tip, not narrowed between seeds; petiole without a gland; flowers in heads Ad.
- Ad. Leaflets 7-11 pairs, an even number, 12-23 mm long, 4-8 mm wide; legume glabrous, 7-7.5 cm long, 7-8 mm wide; stipe 2.5-3 cm long; p. 37. Calliandra carcerea St. & St.
- Ad. Leaflets 2-7 (1-3 1/2 pairs) on a pinna, an odd or even number Ae.
- Ae. Leaflets glabrous or nearly so; legume 8-10 cm long, 8-12 mm wide, glabrous, or unknown; leaflets 3 on a pinna, 1-5 cm long, 8-27 mm wide; p. 37, 39. . . Calliandra emarginata (H. & B.) Bth.
- Ae. Leaflets densely pilose above and beneath, 3-4 on a pinna, 1-2.5 cm long, 8-17 mm wide; legume 5-11 cm long, 6-7 mm wide, densely finely hairy; p. 38. Calliandra mexicana Brandegees
- Ac. Legume not gradually narrowed to base or unknown Af.
- Af. Leaflets minutely hirtellous above, velutinous-pilose beneath, 4 (2 pairs) on a pinna, 3-5 cm long, 1.5-2.7 cm wide; legume unknown; p. 48 Pithecellobium Brownii Stan.
- Af. Leaflets glabrous or nearly so, not hairy on midrib beneath, 4 pairs on a pinna, 3.5-5.5 cm long, 1.5-2.5 cm wide; legume unknown; p. 51 Pithecellobium palmanum Stan.
- E. Pinnae 2-many pairs, at least some leaves with more than 1 pair; flowers in spikes or heads or umbels or racemes Ag.
- Ag. Thorns large, hollow, not recurved, in pairs, at nodes only, usually stout; legumes with slender, spine-like beak; leaflets less than 5 mm wide, glabrous Ah. cp. p. 9
- Ah. Leaflets 8-13 mm long Ai. cp. p. 8

- Ai. Pinnae up to 20 pairs; leaflets 20-30 pairs, 8-11 mm long, 2-3.5 mm wide; legume unknown; p. 30 Acacia Allenii Janzen
- Ai. Pinnae 3 to about 8 pairs; flowers in spikes Aj.
- Aj. Pinnae 3-5 pairs; leaflets 9-18 pairs, 8-13 mm long; gland of petiole near summit; legume long-attenuate to base and tip, flattened, 8 mm wide, at least 20 cm long; stipe 2-3 cm long; p. 32 . . . Acacia Gentlei Stan.
- Aj. Pinnae about 8 pairs; leaflets about 12 mm long; legume 8-12 cm long, terete; spines compressed; flowers in spikes; p. 33 Acacia mayana Lundell
- Ah. Leaflets 2-9 mm long, glabrous or nearly so, sometimes ciliate Ak.
- Ak. Legume terete, 3-5 cm long; gland of petiole trough-shaped; leaflets 5-7 mm long, 2 mm wide; flowers in spikes; thorns terete; p. 31 Acacia cornigera (L.) Willd.
- Ak. Legume much or slightly compressed Al.
- Al. Thorns much flattened; legume opening along lower suture only, differing in this respect from almost all other species; pinnae 6-15 pairs; leaflets 12-20 pairs, 3-8 mm long; petiole and axis of leaves with circular elevated glands; p. 33, illustr. 57 Acacia Hindsii Bth.
- Al. Thorns circular or elliptical in cross section Am.
- Am. Leaflets 2-4 mm long An.
- An. Glands conical, on axis of leaves as well as petiole; leaflets 2-4 mm long, 0.5-1.2 mm wide, 65-75 pairs; thorns when mature glabrous, may be tomentose when young; p. 34. Acacia Ruddiae Janzen
- An. Glands not conical Ao.
- Ao. Leaflets 9-18 pairs, 2.5-3.5 mm long, obtuse, ciliate, 1-nerved; p. 33. Acacia hirtipes Safford
- Ao. Leaflets 18-26 pairs, 3-4 mm long; glands 2-6, circular or oval, on petiole only; pinnae about 15 pairs; thorns glabrous; leaflets less than 1 mm wide; flowers in heads Ap.
- Ap. Glands of petiole 4, conoid; similar but dark gland between each pair of pinnae; leaflets on vegetative branches 12-52 mm long, on flowering branches 6-15 pairs, on vegetative branches 14-18 pairs; spines of flowering branches 5-7 mm long; large spines 5 cm long; p. 32 Acacia Donnelliana Safford

- Ap. Glands of petiole 5-6, circular or oval, obscure on axis of leaves; leaflets 3-4 mm long, 18-26 pairs; pinnae about 15 pairs; twigs glabrous; legume flat; spines ivory-white; p. 33 Acacia globulifera Safford
- Am. Leaflets 5-9 mm long Aq.
- Aq. Glands of petiole 5-6, dome-shaped; thorns terete; no glands on axis of leaves; pinnae several to many pairs; leaflets 6-8 mm long; peduncles nearly 2 mm thick; flowers in spikes; p. 31. . . . Acacia Collinsii Safford
- Aq. Glands of petiole not dome-shaped Ar.
- Ar. Leaflets less than 1 mm wide, 6-7 mm long, many pairs; pinnae 14-28 pairs; legume 10-30 cm long; young thorns hairy; flowers in heads; p. 31. Acacia Cookii Safford
- Ar. Leaflets more than 2 mm wide, 5-6 mm long, 15-30 pairs; pinnae at least 15 pairs; petiole with several conic glands; axis of leaves up to 40 cm long; glands between most pairs of pinnae; p. 33. Acacia melanoceras Beurl.
- Ag. Thorns or spines or prickles solid or none As. cp. p. 7
- As. Petiole and axis of leaves tawny-hirsute; pinnae 8-11 pairs; leaflets 5-10 mm long, 3-6 mm wide; petiole 1-2 cm long, with 1 gland near summit; spines none; legume unknown; p. 47 Pithecellobium Barbourianum Stan.
- As. Petiole and axis of leaves not tawny-hirsute; pinnae (1-) 3-17 pairs; leaflets 10-30 mm long At.
- At. Legume deeply narrowed between seeds, bright-red or reddish; legume straight or slightly curved (falcate) Au. cp. p. 11
- Au. Young twigs almost glabrous; spines 5-15 mm long; leaflets about 25 pairs, 2-8 mm long, up to 2 mm wide; pinnae sometimes 1 pair; branches bearing prickles; p. 47, illustr. 68 Parkinsonia aculeata L.
- Au. Young twigs densely hairy; branches with or without spinesAv.
- Av. Legume twisting when open; pinnae 2-9 pairs; leaflets 8-18 pairs, 1-2.5 cm long, 3-12 mm wide, acute or almost acute; young twigs with dense, rust-colored hairs; petiole without glands or glands obscure; a small gland on axis of leaves between pairs of pinnae; spines none Aw.
- Aw. Veins of leaflets prominent above and beneath; gland between pairs of pinnae erect, truncate or concave; pinnae 4-9 pairs; leaflets 10-14 pairs, 1-2.5 cm long, 5-10 mm wide, acute or almost acute; petiole sometimes with small glands; p. 48. Pithecellobium costaricense (B. & R.) Stan.

- Aw. Veins of leaflets not prominent; gland between pairs of pinnae small circular; pinnae 2-7 pairs; leaflets 3-18 pairs, largest ones mostly 1-2 cm long, 7-11 mm wide, acute or almost acute, glabrous except sometimes midrib beneath; no gland on petiole; legume 10-18 cm long, 1 cm thick, bright-red, finely hairy; p. 48, 52.
 Pithecellobium Donnell-Smithii (B. & R.) Stan.
- Av. Legume not twisting when open; glands sometimes on axis of leaves between pairs of pinnae; spines none except sometimes in *Piptadenia constricta* Ax.
- Ax. Leaflets 3-4 mm wide, 15-20 pairs, 1-1.5 cm long, 3-nerved at base; no glands between leaflets; pinnae 7-11 pairs; petiole with 2 small glands; legume 1.5-2 cm wide; p. 47, illustr. 61 Pithecellobium austrinum Stan. & Wms.
- Ax. Leaflets (5-)7-30 mm wide; pinnae 2-5 pairs Ay.
- Ay. Leaflets 2 pairs; pinnae 2 pairs, glands between leaflets, not on petiole; p. 48 Pithecellobium Bertolonii Bth.
- Ay. Leaflets 5-12 pairs; pinnae 2-5 pairs Az.
- Az. Leaflets reticulate beneath, not above; petiole without a gland; pinnae usually 3 pairs; leaflets 7-9 pairs, 2-5 cm long, 7-27 mm wide, acute or obtuse; axis of leaves with glands between pinnae; Legume beaked; p. 49 Pithecellobium jinotegense Stan. & Wms.
- Az. Leaflets not reticulate above or beneath Ba.
- Ba. Petiole densely brown-hairy; glands of petiole and axis of leaves small; pinnae 2-3 pairs; leaflets 8-11 pairs, 1.5-4 cm long, 7-30 mm wide; legume almost terete, up to 1 cm thick Bb.
- Bb. Leaflets obtuse, puberulent to glabrate beneath, 1.5-4 cm long, 8-30 mm wide; pubescence of twigs and petiole not tomentose; p. 49 Pithecellobium erythrocarpum Stan.
- Bb. Leaflets acute or almost acute, puberulent beneath on midrib, otherwise glabrous or nearly so, 2.5-3 cm long, 7-20 mm wide; twigs, petiole and axis of leaves tomentose; p. 52, 53 Pithecellobium tenellum Stan.
- Ba. Petiole not brown-hairy Bc.
- Bc. Gland of petiole none; pinnae 1-5 pairs; leaflets 5-12 pairs, 3-5 cm long, 5-10 mm wide; strigose on midrib, especially beneath, otherwise glabrous; a gland between each pair of pinnae; p. 53. Pithecellobium sophorocarpum Bth.
- Bc. Gland of petiole large, orbicular, near middle; no glands between leaflets; pinnae 3-5 pairs; leaf-

- lets 3-9 pairs, 6-17 mm long, 11 mm wide; twigs prickly or not; p. 47.
 Piptadenia constricta (Micheli & Rose) Macbride
 At. Legume not or only slightly narrowed between seeds or unknown Bd. cp. p. 9
 Bd. Twigs densely tomentose; pinnae 3-4 pairs; leaflets 6-11 pairs, 1-2 cm long, 3-7 mm wide; legume 2-2.5 cm wide; p. 35 Albizzia tomentosa (Micheli) Stan.
 Bd. Twigs glabrous or hairy, not tomentose Be.
 Be. Leaflets (4-)5-40(-90) mm wide; pinnae (1-)2-13 pairs; cp. p. 15
 Bf. Legume when mature coiled into a circle or twisted Bg.
 Bg. Twigs densely brown-hairy; leaflets 5-7 mm wide, glabrous or nearly so except midrib; valves 1.5 cm wide; p. 53.
 Pithecellobium Zollerianum St. & St.
 Bg. Twigs and leaves glabrous or puberulent Bh.
 Bh. Leaflets alternate, 11-21 (not pairs), on petiolules 3 mm long; leaflets 19-44 mm long, 10-22 mm wide, minutely hairy above and beneath; pinnae 2-5 pairs; legume 12-19 mm wide, curved, indented or depressed between seeds; p. 34, illustr. 59 Adenanthera pavonina L.
 Bh. Leaflets opposite, 5-11 pairs, 1-2.5 cm long, 1-6 (typically 3-4) cm wide, sessile, reticulate-veined above and beneath, glabrous or hairy; axis of leaves bearing 1 club-shaped gland; pinnae 2-3 pairs; p. 51.
 Pithecellobium Peckii Blake
 Bf. Legume when mature straight or slightly curved (falcate) or strongly arcuate, shallower than a semi-circle, or unknown Bi.
 Bi. Leaflets very large, 18-33 cm long, 1.8-8.4 cm wide; pinnae many pairs; legume unknown; p. 49 Pithecellobium Englesingii Stan.
 Bi. Leaflets smaller, 5-70 mm long, 3-27 mm wide
 Bj. Pinnae about 20 pairs; leaflets 15-30 mm long, 4-7 mm wide; legume 2.5-5 cm wide near tip, tapering to base, about 10 cm long, 1-seeded; p. 54
 Schizolobium parahybum (Vell.) Blake

- Bj. Pinnae (1-)2-8(-11) pairs or an odd number, at least some leaves with more than 1 pair Bk. cp. p. 11
- Bk. Axis of leaves and twigs bearing prickles Bl.
- Bl. Legume puberulent, later glabrate, not spiny, 4-8 cm long, 1.2-2 cm wide; pinnae 2-3 pairs; leaflets 1-3 pairs, 1-4 cm long, 1-3 cm wide; p. 36, illustr. 67 Caesalpinia vesicaria L.
- Bl. Legume densely covered with spine-like prickles Bm.
- Bm. Legume 1-seeded, about 9 cm long, 5.5 cm wide; pinnae about 6 pairs; leaflets 6-7 pairs, 6-8.5 cm long; prickles recurved; p. 36 Caesalpinia urophylla (D. S.) Stan.
- Bm. Legume several-seeded, 5-12 cm long, 6 cm wide; pinnae 4-8 pairs; prickles straight or hooked Bn.
- Bn. Stipules leaf-like, sometimes 5 cm wide; pinnae 4-8 pairs; bracts of inflorescence reflexed; seeds gray; prickles straight; p. 35 Caesalpinia Crista L.
- Bn. Stipules none or awl-like; pinnae 3-6 pairs; bracts erect or spreading; seeds yellow or olive; prickles hooked (uncinate); p. 35 Caesalpinia Bonduc (L.) Roxb.
- Bk. Axis of leaves not bearing prickles Bo.
- Bo. Legume winged; pinnae several pairs; leaflets about 15 mm long, 6 mm wide, obtuse; petiole 5 cm long; p. 47 Peltophorum inerme (Roxb.) Naves
- Bo. Legume not winged Bp.
- Bp. Legume not opening when mature; petiole without a gland; pinnae 9-11 pairs; leaflets 12-18 pairs, 8-10(-20) mm long, mostly alternate, puberulent beneath, round at tip; p. 54 Stryphnodendron excelsum Harms
- Bp. Legume opening when mature Bq.
- Bq. Gland oblong, 1 cm long, between lowest pair of pinnae; pinnae usually 3 pairs; leaflets 5-8 pairs, 2-5 cm long, 1-2.2 cm wide; legume about 10 cm long, 2 cm wide, much curved; p. 51 Pithecellobium macradenium Pittier
- Bq. Gland between lowest pair of pinnae, if any, not 1 cm long Br.
- Br. Petiole with 1 or more usually large glands distinctly below lowest pinnae; glands sometimes on axis of leaves also between 1 or more pairs of pinnae Bs. cp. p. 14
- Bs. Axis of leaves glabrous or nearly so or minutely pubescent, without prickles Bt.

- Bt. Legume pubescent, 10-18 cm long, 1.5-2.5 cm wide, on a stipe; leaflets 1.2-2.2 cm long, 5-8 mm wide, reticulate-veined; gland of petiole oblong; p. 41, illustr. 64 Leucaena Shannonii D. S.
- Bt. Legume glabrous; leaflets 15-60 mm long Bu.
- Bu. Glands none on axis of leaves between pinnae Bv.
- Bv. Pinnae 6 or 8 (3 or 4 pairs); axis of leaves about 6 cm long; leaflets 6-10, 15-50 mm long, 7-25 mm wide, densely canescent-pubescent beneath when young; p. 41. Leucaena multicapitula Schery
- Bv. Pinnae 4-6 (2-3 pairs); leaflets 2-5 pairs, usually 3-4 pairs, 2-4 cm long, 10-20 mm wide, puberulent beneath; veins very prominent above; p. 34. Albizzia adinocephala (D. S.) B. & R.
- Bu. Glands on axis of leaves between pairs of pinnae Bw.
- Bw. Legume 6-9 cm long, 2.5 cm wide, castaneous; leaflets 1-3 cm wide, not reticulate-veined; gland of petiole small; p. 50. Pithecellobium leucocalyx (B. & R.) Stan.
- Bw. Legume 13-30 cm long Bx.
- Bx. Pinnae 2-4 pairs; leaflets 2-5 cm long; legume 15-30 cm long, 2-5 cm wide; p. 35, illustr. 65 Albizzia Lebbeck (L.) Bth.
- Bx. Pinnae 5-8 pairs; leaflets 1.5-2 cm long, legume 13 cm long, 1 cm thick; seeds black; p. 53 Pithecellobium Tonduzii (B. & R.) Stan.
- Bs. Axis of leaves pilose or short-pilose or tomentulose; legume 2-3.5 cm wide By.
- By. Spines at nodes short, recurved; leaflets 7-15 mm wide, 2-3 pairs, 1-2.5 cm long; pinnae 2 pairs; legume glabrous, flat or compressed, straight, 10-15 cm long, 2-3 cm wide; p. 52. Pithecellobium platylobum (Sprengel) Urban
- By. Spines none; glands on axis of leaves between pairs of pinnae; pinnae 2-6 pairs; twigs tomentose; leaflets 10-25 mm wide, 3-7 pairs, 1.5-4 cm long; pinnae 2-6 pairs; gland of petiole near middle; legume 15-20 cm long, 2.5-3.5 cm wide; p. 35 Albizzia longepedata (Pittier) B. & R.
- Br. Petiole without a gland distinctly below lowest pinnae or glands obscure Bz.
- Bz. Axis of leaves with glands between pairs of pinnae, sometimes between lowest or terminal pair only Ca.
- Ca. Spines at nodes of branches; glands on axis of leaves large, club-shaped, more than 1; leaflets 1-3 cm long, 5-10 mm wide, gradually narrowed to obtuse tip, glabrous except midrib; pinnae 3-4 pairs; legume unknown; p. 51 Pithecellobium pistaciifolium Stan.

- Ca. Spines none; glands on axis of leaves orbicular, not club-shaped; young twigs densely short-pilose; pinnae with a small orbicular gland between each pair; leaflets 4-20 mm wide Cb.
- Cb. Leaflets 4-10 mm wide, 1-4.5 cm long, 6-12 pairs, hairy on veins beneath; pinnae 2-3 pairs; legume unknown; p. 49. Pithecellobium graciliflorum Blake
- Cb. Leaflets 20 mm wide, 2-8 pairs, 2-4 cm long, densely velutinous-pilose beneath; pinnae 2-6 pairs; legume 10-20 cm long, 1-2 cm wide, glabrous; p. 52., illustr. 54 Pithecellobium Saman (Jacq.) Bth.
- Bz. Axis of leaves without glands between pinnae Cc. cp. p. 13
- Cc. Legume gradually narrowed to base, attenuate, widest near tip, subacute or rounded, straight or nearly so, or or unknown; spines none Cd.
- Cd. Legume 2.5-5 cm wide, 8-12 cm long, 1-seeded; pinnae and leaflets several to many pairs; leaflets 1.5-3 cm long, 4-7 mm wide; p. 54
- Schizolobium parahybum (Vell.) Blake
- Cd. Legume 0.6-1.5 cm wide; pinnae 1-3 pairs Ce.
- Ce. Leaflets 1-2 cm long, 6-12 mm wide, 3-7 pairs; legume 6-10 mm wide near tip; p. 36, illustr. 59 Calliandra capillata Bth.
- Ce. Leaflets 2-3.5 cm long Cf.
- Cf. Leaflets 10-15 pairs, oblong, acute; legume 8 cm long; pinnae 3 pairs; twigs glabrous; p. 37 . . . Calliandra costaricensis (B. & R.) Stan.
- Cf. Leaflets 1-8 pairs, rounded or obtuse at tip; pinnae 1-3 pairs Cg.
- Cg. Leaflets 4-6 pairs, 10-20 mm wide; legume 6-10 mm wide near tip; twigs densely short-pilose; p. 38 . Calliandra penduliflora Rose
- Cg. Leaflets 6-8 pairs, largest ones 18-20 mm wide; legume 1.5 cm wide near tip; twigs glabrous; p. 39. . Calliandra Quetzal D. S.
- Cc. Legume not gradually narrowed to base; pinnae 2-9 pairs; leaflets 2-65 pairs, 4-35 mm long Ch.
- Ch. Spines on branches, not on axis of leaves; leaflets 7-11 pairs; legume about 2 cm long; p. 43.
- Mimosa canahuensis St. & St.
- Ch. Spines none Ci.
- Ci. Leaflets 16-60 mm long, 4-7 mm wide; legume 2-5 cm wide near tip; pinnae 2-5 pairs Cj.
- Cj. Leaflets 4-6 pairs, 1.5-2.5 cm long Ck.

- Ck. Leaflets (7-)11-13 mm wide; legume 6-8 cm long, about 18 mm wide, dark-dotted; p. 35 Caesalpinia affinis Hemslley
- Ck. Leaflets 5-10 mm wide; legume 5-9 cm long, 20-25 mm wide, not dark-dotted; p. 35. Caesalpinia Conzattii (Rose) Stan.
- Cj. Leaflets 5-8 pairs, 1-6 cm long, 2-3 cm wide; legume 2.5-3 cm wide, not dark-dotted; pinnae 2-4 pairs Cl.
- Cl. Legume 6-10 cm long, on short stipe; leaflets 2-5 cm long, 2-3 cm wide; twigs and axis of leaves puberulent or glabrate; p. 36 Caesalpinia violacea (Miller) Stan.
- Cl. Legume 10-15 cm long, on long stipe; leaflets 3-6 cm long, 2-2.5 cm wide; twigs and axis of leaves densely velutinous-pilose; p. 36 Caesalpinia velutina (B. & R.) Stan.
- Ci. Leaflets 4-15 mm long Cm.
- Cm. Leaflets pilose beneath, not only on veins; pinnae 2-5 pairs; leaflets 2-6 pairs, mostly 2.5-4 cm long; twigs and petiole pubescent; p. 36 . . . Caesalpinia Recordii B. & R.
- Cm. Leaflets glabrous beneath or hairy on veins only Cn.
- Cn. Pinnae 4-9, not always in pairs, that is, alternate or opposite; leaflets dark-dotted beneath, 1-3 cm long, 7-15 mm wide; legume 8 cm long, 2 cm wide, acuminate, glabrous; p. 35 Caesalpinia Gaumeri Greenman
- Cn. Pinnae in pairs, an even number; legume 1.5-2.5 cm wide Co.
- Co. Leaflets about 10 pairs on a pinna, 10-23 mm long, 5-10 mm wide; pinnae 3-9 pairs, opposite or alternate; legume 6-12 cm long, glabrous, 1.5-3 cm wide, in a raceme; lowest pedicels 6-9 cm long in fruit; p. 36, illustr⁶⁷ Caesalpinia pulcherrima (L.) Sw.
- Co. Leaflets 1-4 pairs on a pinna Cp.
- Cp. Pinnae 3-4 pairs; leaflets 3-4 pairs, 1.5 cm long, 4-15 mm wide; legume 8-12 cm long, 1.5-2.5 cm wide, puberulent; p. 35. Caesalpinia exostemma DC.
- Cp. Pinnae 4-7 pairs; leaflets 2-3.5 cm long, 4-15 mm wide; legume 2-2.5 cm wide; p. 35. Caesalpinia yucatanensis Greenman
- Be. Leaflets 0.5-4(-5) mm wide Cq. cp. p. 11
- Cq. Legume or valves when mature coiled or much curved laterally before opening, often more than a semicircle; leaflets 8-40 pairs, 0.5-8 mm wide; pinnae 10-20 pairs Cr.
- cp. p. 16
- Cr. Leaflets 2-7(-9) mm long, glabrous ; spines none Cs.
- Cs. Axis of leaves without a gland between pairs of pinnae; axis pubescent; leaflets obtuse or rounded at tip, 3-9 mm long, up to 2 mm wide, glabrous, usually dark-dotted; legume up to 6 cm long, 2 cm wide, much coiled in age, apparently not opening;

- petiole 1-2 cm long, without a gland; pinnae 4-10 pairs; spines none; p. 35 . Caesalpinia coriaria (Jacq.) Willd.
- Cs. Axis of leaves with a gland between all or most pairs of pinnae; axis tomentulose Ct.
- Ct. Legume closed in center, 5 cm in diameter; leaflets 2-4 mm long, about 0.5 mm wide, midrib off center; petiole with 1 or more usually large glands; spines none; p. 40. Enterolobium Schomburgkii Bth.
- Ct. Legume open in center; petiole with 1 or more usually large glands; spines none Cu.
- Cu. Leaflets almost 2 mm wide, midrib nearly in center; pinnae 12-16 pairs; leaflets 5-7 mm long; p. 52
Pithecellobium pseudo-Tamarindus (Britton) Stan.
- Cu. Leaflets 3-5 mm wide, 8-15 mm long; pinnae 4-10 pairs; glands of axis of leaves small, orbicular; leaflets obtuse; legume usually much curved, almost terete, brown-tomentulose; flowers unknown; p. 53
. Pithecellobium vulcanorum St. & St.
- Cr. Leaflets (7-)8-20 mm long, 16-40 pairs, 0.5-4 mm wide Cv.
- Cv. Spines at nodes; pinnae 10-17 pairs; leaflets 9-18 mm long, 2-4 mm wide; legume curved and coiled; petiole without a gland; p. 51. . Pithecellobium macrandrium D. S.
- Cv. Spines none Cw.
- Cw. Legume closed in center (circinate), 8-10 cm in diameter; pinnae 5-15 pairs; leaflets 20-30 pairs, 8-15 mm long, 2-4 mm wide; petiole with or without a gland; p. 40, 47, 61 Enterolobium cyclocarpum (Jacq.) Griseb.
- Cw. Legume open in center; twigs densely brown-hairy; leaflets glabrous or nearly so or puberulent; petiole with 1 or more usually large glands; leaflets 0.5-4 mm wide Cx.
- Cx. Legume almost terete, much curved or coiled or twisted, puberulent or glabrate; leaflets 8-12 mm long, (0.5-)1-3 mm wide, palmately veined at base; glands on axis of leaves; p. 47
. Pithecellobium arboreum (L.) Urban
- Cx. Legume flat or compressed, coiled and twisted when open, glabrous or nearly so; valves 1 cm wide; leaflets 7-11 mm long, 2.5-4 mm wide; p. 49
. Pithecellobium halogenes Stan.
- Cq. Legume when mature straight or slightly curved (falcate) or unknown, sometimes twisted or recurved when opening; pinnae 2-20 or more pairs, at least some leaves with more than 2 pairs of pinnae Cy.

- Cy. Legume gradually narrowed to base (attenuate), or unknown; petiole without a gland; gland between lowest pair of pinnae or none Cz.
- Cz. Legume not opening when mature; pinnae 9-11 pairs; leaflets 12-18 pairs, 8-10(-20) mm long, mostly alternate, puberulent beneath, rounded at tip; p. 54.
 Stryphnodendron excelsum Harms
- Cz. Legume opening when mature Da.
- Da. Legume on a stipe, attenuate to base; leaflets 9-20 pairs, 8-18 mm long Db.
- Db. Legume 5-6 cm long, almost 1 cm wide near tip, lightly pubescent; pinnae 4-10 pairs; leaflets 8-9 mm long, 1-4 mm wide; petiole with or without a gland; p. 34. Acacia villosa (Sw.) Willd.
- Db. Legume 10-18 cm long Dc.
- Dc. Legume 2-2.5 cm wide, glabrous or nearly so; stipe long; leaflets obtuse, 12-20 pairs; pinnae 3-4 pairs; axis of leaves with a large gland between each pair of pinnae; p. 34.
 Albizzia idiopoda (Blake) B. & R.
- Dc. Legume 1.5 cm wide, densely puberulent; stipe stout; leaflets acute, 4-9 pairs; pinnae 3-10 pairs; petiole with or without a gland; p. 41, illustr. 64 . . . Leucaena latisiliqua (L.) Gillis
- Da. Legume not on stipe, 4-12 cm long Dd.
- Dd. Leaflets pubescent, 7-22 pairs, oblong, 8-12 mm long; pinnae 3-6 pairs; p. 38 Calliandra mollis Stan.
- Dd. Leaflets glabrous above but sometimes ciliate De.
- De. Legume glabrous or nearly so Df.
- Df. Pinnae about 15-20 or more pairs; leaflets 25-30 or more pairs, 6-10 mm long, 1-2 mm wide Dg.
- Dg. Legume almost 8 cm long, 12 mm wide, margins much thickened; peduncles 5-8 mm long; leaflets 3-10 mm long; p. 37
 Calliandra confusa Sprague & Riley
- Dg. Legume up to 4 cm wide near tip, 20-30 cm long; valves recurved when open; leaflets 6-9 mm long, 1-2 mm wide; p. 47. . .
Pentaclethra macroloba (Willd.) Kuntze
- Df. Pinnae 2-7 pairs Dh.
- Dh. Branches 4-angled; peduncles 4-7 cm long; pinnae 4-7 pairs; margins of valves much thickened; leaflets 15-25 pairs, 6-12 mm long; p. 39
 Calliandra tetragona (Willd.) Bth.

Dh. Branches terete Di.

Di. Leaflets 4-6 mm long, 0.8-1 mm wide, 14-16 pairs; pinnae 2-4 pairs; leaflets acute glabrous; p. 38.
 Calliandra pallida (B. & R.) Stan.

Di. Leaflets 8-16 mm long, 10-35 pairs, acute or obtuse; pinnae 2-6 pairs; petiole 1-3 cm long or less; legume glabrous or lightly pubescent; p. 37, 39
 Calliandra caracasana (Jacq.) Bth.

De. Legume hairy; leaflets acute or obtuse Dj. cp. p. 17

Dj. Pinnae 2-5 pairs Dk.

Dk. Leaflets acute, about 20 pairs, 8-12 mm long; legume 9-10 cm long, 9 mm wide near tip, densely white-lanate; pinnae usually 3 pairs; p. 36.
 Calliandra belizensis (B. & R.) Stan.

Dk. Leaflets obtuse or rounded Dl.

Dl. Pinnae 30-60 mm long, 2-3 pairs; leaflets 5-9 mm long, obtuse, spreading-pilose beneath; p. 38.
 Calliandra Molinae Stan.

Dl. Pinnae 2-20 mm long, 3-5 pairs; leaflets 4-7 mm long, glabrous except minutely ciliate; legume about 8 mm wide Dm.

Dm. Pinnae 5-20 mm long, 3 pairs; petiole usually less than 1 cm long; legume flat, up to 8 cm long; p. 37
 Calliandra Cumingii Bth.

Dm. Pinnae 20-30 mm long, 3 pairs; petiole 1-1.5 cm long; legume 4-angled, 7-9 cm long; p. 39
 Calliandra tapirorum Stan.

Dj. Pinnae 7-20 pairs; leaflets 20-40(-65) pairs, 3-7 mm long; legume 12-15 mm wide, hispid or pilose or strigose; Dn.

Dn. Leaflets somewhat curved, acute; midrib off center, 30-40 pairs, 4-7 mm long, 0.75-2 mm wide, glabrous above; legume 8-12 cm long, 1.5-2 cm wide near tip, obtuse, brown-hispid; pinnae 7-12 pairs; p. 37.
 Calliandra Houstoniana (Miller) Stan.

Dn. Leaflets straight or nearly so; midrib on center or nearly so; leaflets acute or obtuse Do.

Do. Legume linear-spatulate, margins thick, scarcely 1 cm wide, pubescent; p. 39
 Calliandra Pittieri Stan.

Do. Legume not spatulate, 12-15 mm wide, beaked, densely hispid; p. 37, illustr. 59
 Calliandra grandiflora Rose

Cy. Legume not gradually narrowed to base (not attenuate) Dp.
cp. p. 17

Dp. Branches bearing spines or prickles Dq. cp. p. 21

Dq. Spines scattered, not at nodes only, sometimes on old wood only; legume not on stipe; gland of petiole sometimes small Dr. cp. p. 20

Dr. Petiole also bearing spines or prickles; axis of leaves also spiny and bearing at upper nodes at least prominent glands or appendages Ds.

Ds. Petiole with an oblong gland; pinnae 20 or more pairs; leaflets 4 mm long, less than 1 mm wide; p. 34 Acacia tenuifolia (L.) Willd.

Ds. Petiole without a gland Dt.

Dt. Pinnae 5-8 pairs; leaflets 6-8 mm long, 1 mm wide; legume spiny on margins and stipe; stipe long; p. 43
. . . Mimosa Donnell-Smithii (B. & R.) St. & St.

Dt. Pinnae 2-5 pairs; leaflets 3-20 mm long, 1-2 mm wide Du.

Du. Pinnae mostly 2-3 pairs; side-veins of leaflets not evident; legume 4 mm wide, with long beak; p. 54
. Schrankia leptocarpa DC.

Du. Pinnae mostly 4-5 pairs; side-veins of leaflets evidently reticulate beneath; legume 5-6 mm wide, with short beak; p. 54
. Schrankia hamata H. & B.

Dr. Petiole not spiny Dv.

Dv. Petiole without a gland; leaflets 3-5 mm long; legume with or without stiff, straight, marginal spines; p. 45 Mimosa platycarpa Bth.

Dv. Petiole bearing 1 or more glands; legume without marginal spines Dw.

Dw. Young leaflets gland-dotted; gland of petiole oblong; leaflets many pairs, 5-10 mm long, glabrous above and beneath except, when young, sometimes hairy; axis of leaves with or without spines; branches usually with spines; p. 47 . . Piptadenia flava (Sprengel) Bth.

Dw. Young leaflets and others not gland-dotted; legume usually on a stipe Dx.

Dx. Midrib of leaflets off center Dy.

Dy. Axis of leaves spiny; gland of petiole small; leaflets about 10 mm long, 2-3 mm wide; branches with or without spines; p. 33 . . Acacia glomerosa Bth.

- Dy. Axis of leaves not spiny, pubescent, bearing many glands; glands of petiole 1 or 2, cupulate; Leaflets 8-10 mm long; stipe short; p. 33 Acacia Hayesii Bth.-
- Dx. Midrib of leaflets not much off center; leaflets 3-7 mm long, 0.5-1 mm wide, glabrous above; legume 6-15 cm long, 1.5-2.5 cm wide, puberulent or tomentulose Dz.
- Dz. Petiole bearing usually 2 glands, about 2 cm long axis of leaves up to 15 cm long; pinnae 6-20 pairs; leaflets 20-40 pairs; legume tomentulose; axis of leaves bearing glands; p. 33 Acacia riparia HBK.
- Dz. Petiole bearing only 1 gland; pinnae 7-10 pairs; leaflets 15-30 pairs, puberulent or glabrous; legume puberulent; p. 33, 34 . . Acacia riparioides (B. & R.) Stan.
- Dq. Spines at nodes only Ea.
- Ea. Legume on a short stipe, densely tomentulose at least when young; pinnae 6-9 pairs; leaflets 3-10 mm long, 1-2 mm wide, glabrous above, puberulent beneath; legume 2-2.5 cm wide; spines sometimes at nodes; p. 47.
. Pithecellobium albicans (Kunth) Bth.
- Ea. Legume not on stipe, often glabrous, sometimes puberulent at first, not tomentulose; spines on branches at nodes Eb.
- Eb. Gland on axis of leaves between at least the terminal pair of pinnae Ec.
- Ec. Pinnae 4-10 pairs; leaflets 8-30 pairs, 6 mm long, little more than 1 mm wide; gland of petiole club-shaped; petiole 1-2 cm long; legume compressed, glabrous; p. 51
. Pithecellobium mangense (Jacq.) Macbride
- Ec. Pinnae 8-60 pairs; petiole and axis of leaves hairy; legume almost terete, glabrous or nearly so or puberulent; leaflets many, not quite 3 mm long, not quite 1 mm wide; petiole about 1 cm long; p. 33
. Acacia macracantha H. & B.
- Eb. Gland none on axis of leaves between pairs of pinnae; pinnae (1-)2-many pairs; legume 6-30 mm wide or thick Ed.
- Ed. Legume 6-8 mm thick, swollen densely hairy, 8-14 cm long, often slightly narrowed between seeds; leaflets 4-7 mm long, about 1 mm wide, obtuse; p. 34, illustr. 57 Acacia tortuosa (L.) Willd.
- Ed. Legume 7-30 mm wide or thick Ee.
- Ee. Legume 15-30 mm wide; leaflets 2-3 mm long, pubescent; pinnae many pairs; young twigs densely hairy; spines up to 15 mm long; p. 33
. Acacia pennatula (S. & C.) Bth.

- Ee. Legume 7-15 mm wide or thick; pinnae 1-6 pairs; legume glabrous Ef.
- Ef. Leaflets 4 mm long, 1 mm wide, 10-25 pairs, glabrous or nearly so beneath; petiole up to 1 cm long; petiole and axis of leaves hairy; legume glabrous, swollen (turgid), 1 cm thick; p. 32, illustr. 57 Acacia Farnesiana B. & R.
- Ef. Leaflets 8-15 mm long Eg.
- Eg. Leaflets 5-10 pairs, 8-13 mm long; pinnae 2-4 pairs; gland of petiole club-shaped; legume 7-12 mm wide; branches with or without spines; p. 51, 53 . . . Pithecellobium leucospermum Brandegee
- Eg. Leaflets 10-20 pairs, mostly 15 mm long, 1-5 mm wide, glabrous or sparsely pubescent; pinnae 1-3 pairs; gland of petiole small or none; legume 7-20 cm long, 8-15 mm wide; spines 1-4 cm long; p. 51, 53, illustr. 66 Prosopis juliflora (Sw.) DC.
- Dp. Branches without spines or prickles Eh. cp. p. 19
- Eh. Legume very large, 40-60 cm long, 5-7 cm wide; pinnae 10-25 pairs; leaflets 4-10 mm long, 3-4 mm wide; legume not on stipe; p. 39. Delonix regia (Bojer) Raf.
- Eh. Legume shorter, narrower; pinnae 3-8 pairs; not on stipe
- Ei. Petiole and leaflets stellate-hairy, 7-12 pairs, 3-5 mm wide; pinnae 5-8 pairs; legume 2-2.5 cm wide; p. 35 Caesalpinia eriostachys Bth.
- Ei. Petiole and leaflets not stellate-hairy Ej.
- Ej. Legume not on stipe Ek.
- Ek. Leaflets 2-6 mm wide El. cp. p. 22
- El. Legume 11-12 cm long, 16-18 mm wide; pinnae 4-6 pairs; leaflets obtuse Em.
- Em. Leaflets about 25 pairs, 6-8 mm long; pinnae about 6 pairs; p. 42. Lysiloma Seemannii B. & R.
- Em. Leaflets 9-12 pairs, 7-12 mm long, 3-4 mm wide, glabrous above, puberulent and strongly nerved beneath; petiole with oblong gland near middle; p. 34. Albizzia Hummeliana B. & R.
- El. Legume 2-3 cm wide; leaflets 10-35 pairs En.
- En. Pinnae 2-5 pairs; leaflets 10-30 pairs, 8-15 mm long, 2-4 mm wide, wedge-shaped at base; legume 8-15 cm long, 2-2.5 cm wide valves separating at maturity from persistent margins; gland of petiole large; p. 41, illustr. 65 Lysiloma bahamense Bth.

- En. Pinnae 6-many pairs; leaflets 12-35 pairs, 10-12 mm long, 2-3 mm wide, midrib much off center; legume up to 20 cm long, 3 cm wide, rounded to almost truncate at tip, valves not separating from margins; gland of petiole small; branches with or without spines; p. 22, 33 Acacia glomerosa Bth.
- Ek. Leaflets 0.5-2 mm wide, glabrous except sometimes ciliate or hairy on midrib Eo.
- Eo. Legume 3-5 mm wide; petiole usually no more than 5 mm long; leaflets 10-20 pairs; pinnae 1-7 pairs; gland between lowest pair of pinnae; small shrub or almost an herb; p. 39, illustr. 61 Desmanthus virgatus (L.) Willd.
- Eo. Legume 8-30 mm wide Ep.
- Ep. Pinnae 2-3(-4) pairs; leaflets 4-5 mm long, 0.8-1 mm wide; no gland on petiole; legume 5-10 cm long, 12 mm wide; p. 22, 31 Acacia Baileyana F. Mueller
- Ep. Pinnae 5-25 pairs Eq.
- Eq. Pinnae 13-25 pairs; axis of leaves with a gland between each pair of pinnae; legume 3.5-6 cm long, 9-12 mm wide, glabrous; leaflets 4-8 mm long, 0.5 mm wide; spines none; p. 32 Acacia dealbata Link
- Eq. Pinnae 5-13 pairs Er.
- Er. Petiole with 1 or more glands Es.
- Es. Leaflets acute; pinnae 8-13 pairs; petiole with a gland, 1-4 cm long; branches with or without thorns; margins of legume not elevated; p. 19, 47 Piptadenia flava. (Sprengel) Bth.
- Es. Leaflets obtuse, 30-50 pairs; petiole with 1 or more glands, 1-5 cm long; pinnae 5-10 pairs; margins of legume elevated; legume 1.5-2.5 cm wide; p. 34 Albizzia caribaea (Urban) B. & R.
- Er. Petiole without a gland Et.
- Et. Legume much coiled in age, up to 6 cm long, 2 cm wide; petiole usually 1-2 cm long; pinnae usually about 15; legume twisted; leaflets 12-28 pairs, usually black-dotted beneath, 4-8 mm long; p. 35 Caesalpinia coriaria (Jacq.) Willd.
- Et. Legume straight or nearly so; pinnae 6-12 pairs or more; legume 4-8 cm long, 8-12 mm wide; leaflets 4-7 mm long; p. 30 Acacia angustissima (Miller) Kuntze
- Ej. Legume on a stipe Eu. cp. p. 21
- Eu. Leaflets hairy beneath more than sparsely Ev.
- Ev. Pinnae 4-5 pairs; leaflets hairy above, 3-5 mm long; legume 2-2.8 cm wide; petiole with large gland above middle; p. 42 Lysiloma Kellermanii B. & R.

Ev. Pinnae 5-20 pairs Ew.

Ew. Young branches tomentose, later glabrous; petiole 2-3 cm long, usually without a gland; leaflets 10-25 pairs, 4-6 mm long, 1-2 mm wide; midrib off center; axis of leaves without a gland; pinnae 7-15 pairs; legume 2 cm wide; p. 25, 48
 . . Pithecellobium carbonarium (Britton) Niez. & Nevl.

Ew. Young branches puberulent or glabrate or glabrous, not tomentose; petiole with a gland below lowest pinnae; pinnae 6-12 pairs at least Ex.

Ex. Legume 2-2.5 cm wide, 9-12 cm long; leaflets 18-32 pairs, glabrous above, 1-2 mm wide or narrower; pinnae 6-10 pairs Ey.

Ey. Leaflets sparsely silky beneath, 4-6 mm long, 0.15-1.5 mm wide; legume glabrous, margins not thickened; stipe 5-10 mm long; p. 32
 Acacia Deamii (B. & R.) Stan.

Ey. Leaflets puberulent beneath, 3-10 mm long, 1-2 mm wide; legume densely ferruginous-tomentose, margins thickened; stipe short; p. 20, 47
 Pithecellobium albicans (Kunth) Bth.

Ex. Legume 1.3-2 cm wide Ez.

Ez. Pinnae 5-11 pairs; leaflets when young appressed-hairy beneath, in age glabrous; legume 1.3-1.3-1.6 cm wide; veins of leaflets elevated; stipe stipe 1.5 cm long; p. 32
 Acacia dolichostachya Blake

Ez. Pinnae 12-20 pairs; leaflets 25-35 pairs, 3-5 mm long, 0.5-1.5 mm wide, pubescent beneath; axis of leaves bearing at tip a gland; legume 1.5-2 cm wide; stipe 1 cm long; p. 40
 Leucaena guatemalensis B. & R.

Eu. Leaflets glabrous beneath or nearly so, even when young, or sparsely appressed-pilosulous or minutely puberulent, sometimes ciliate Fa. cp. p. 22

Fa. Side-veins prominent; leaflets 3-5 mm long; petiole without a gland Fb.

Fb. Leaflets revolute; pinnae 2-8 pairs; legume 3-5 cm long, 8-10 mm wide, not on stipe, long acuminate, pubescent; p. 33 Acacia polypodioides Stan.

Fb. Leaflets not revolute, 1-2 mm wide, obtuse, ciliate; legume 2-3 cm long, at least 1 cm wide, on a stipe, glabrous, rounded at tip; pinnae 2-4 pairs; petiole without a gland; p. 46 Neptunia pubescens Bth.

Fa. Side-veins not prominent Fc.

Fc. Axis of leaves glabrous or nearly so, or sparsely appressed-pilosulous; legume 0.3-1.5(1.8) cm wide, rounded at tip; leaflets obtuse; pinnae 2-4 pairs Fd.

Fd. Plant floating; legume not at right angle to stipe, 2-2.5 cm long, 8-10 mm wide; leaflets 6-13 mm long; petiole without a gland; p. 46.
 Neptunia prostrata (Lam.) Baill.

Fd. Plant not floating; petiole with a gland near summit; legume 2-5 cm long, 8 mm wide, at right angle to stipe; leaflets 4-10 mm long; p. 46.
 Neptunia plena (L.) Bth.

Fc. Axis of leaves hairy, at least puberulent Fe.

Fe. Leaflets 2-7 mm long; petiole with 1 or more glands

/ Ff. cp. p.

Ff. Leaflets 2-3 mm long, 0.5 mm wide, 7-22 pairs, acute, glabrous or nearly so; pinnae 12-22 pairs; gland of petiole near middle; twigs puberulent or almost glabrous; flowers in spikes; legume unknown; p. 31. Acacia centralis (B. & R.) Lundell

Ff. Leaflets 3-5 mm long, glabrous or nearly so, usually ciliate; pinnae 7-25 pairs; twigs densely short-pilose; axis of leaves densely pubescent Fg.

Fg. Legume 3-3.5 cm wide, glabrous, on stipe Fh.

Fh. Legume beaked; leaflets 4-5 mm long, obtuse, 25-50 pairs; petiole with a gland; flowers in racemes; pinnae 10-25 pairs; p. 41 Lysiloma auritum (Schlecht.) Bth.

Fh. Legume not beaked; leaflets 3-5 mm long, 40-60 pairs, obtuse or almost acute; pinnae 7-15 pairs; petiole with 1 or more glands; flowers in spikes; p. 41
 Lysiloma desmostachys Bth.

Fg. Legume (1.8-)2.5-3 cm wide, obtuse or acute; leaflets 4-8(-11) mm long, acute to obtuse Fi.

Fi. Pinnae 10-25 pairs; legume on stipe; leaflets 2.5-7 mm long Fj.

Fj. Legume 1.5-1.8 cm wide; stipe 0.6-1 cm long; leaflets 4-5 mm long, 0.5-1 mm wide, acute; pinnae 10-25 pairs; axis of leaves puberulent; p. 40 Leucaena brachycarpa Urban

Fj. Legume 2.2-2.5 cm wide, rust-colored, glabrous; stipe 1.5-3 cm long; pinnae 15-25 pairs; leaflets 2.5-4 mm long; axis of leaves short-pilose; flowers in heads; p. 42 illustr. 65 Lysiloma multifoliolatum B. & R.

- Fi. Pinnae usually less than 10 pairs; leaflets 4-7 mm long, 0.5-2 mm wide; petiole with a gland Fk.
- Fk. Legume 1-1.5 cm wide, puberulent; stipe 6-8 mm long; pinnae 5-10(-15) pairs; axis of leaves puberulent; p. 40 Leucaena diversifolia (Urban) B. & R.
- Fk. Legume 2.5-3 cm wide, on pedicel, not on stipe, blackish, glabrous; pinnae 9 pairs; leaflets short-pilose; axis of leaves velutinous-pilosulous; p. 41, ... illustr. 65 Lysiloma acapulcense (Kunth) Bth.
- Fe. Leaflets (7-)8-20(-25) mm long, 1-3 mm wide; axis of leaves bearing glands at least at upper nodes; spines none Fl.
- Fl. Pinnae 5-6 pairs; legume not on stipe; leaflets about 8 pairs, 10-25 mm long, acute, puberulent beneath; flowers in umbels; p. 51
- Pithecellobium nicoyanum (B. & R.) Niez. & Nevl.
- Fl. Pinnae 7-15 pairs Fm.
- Fm. Legume on stipe; leaflets pubescent above and beneath; legume 8-11 cm long, almost 2 cm wide, pubescent; gland between terminal pair of pinnae only; leaflets 10-25 pairs, 4-6 mm long, 1-2 mm wide; petiole 2-3 cm long, usually without a gland; p. 48
- Pithecellobium carbonarium (Britton) Niez. & Nevl.
- Fm. Legume unknown; leaflets glabrous, acute, 20-30 pairs, 8-12 mm long, 1 mm wide; p. 53
- Pithecellobium Tuerckheimii (B. & R.) St. & St.

ARTIFICIAL KEY TO SPECIES OF
MIMOSA IN NICARAGUA
OTHER COUNTRIES OF CENTRAL AMERICA

- A. Leaflets 4-40 mm wide, at least some leaflets 4 mm wide or wider B.
- B. Leaflets 1-4 pairs (2-8) or an odd number on a pinna; legume jointed C.
- C. Pinnae (1-)2-3 pairs, at least some leaves with more than 1 pair; twigs with abundant recurved prickles; petiole and axis of leaves with 1 or more glands; leaflets usually 3 pairs, upper ones 2-4 cm wide, obtuse or rounded at tip; woody vine D.
- D. Leaflets sparsely granular-resiniferous beneath; p. 46 Mimosa resinifera Britton
- D. Leaflets not granular-resiniferous; p. 46.
- Mimosa Watsonii Robinson

C. Pinnae 1 pair E.

E. Leaflets 6-8 (3-4 pairs) on a pinna, 1-3 cm long, 5-15 mm wide, palmately veined at base; legume 3-4 cm long, 12 cm wide; p. 43. Mimosa Casta L.

E. Leaflets 3-4; lower leaflet(s) (1 or each pair) on same pinna much reduced; legume 1-3 cm long, 3-10 mm wide F.

F. Plant an erect shrub; leaflets very unsymmetrical, 2 pairs G.

G. Leaflets 1.5-3.5 cm long; branches glabrous or nearly so; legume unknown; p. 46 Mimosa sesquijugata D. S.

G. Leaflets 3-8 cm long, densely strigose; branches pubescent, usually densely, with few spines; floral bractlets no longer than puberulent buds, scarcely visible; p. 46 Mimosa albida H. & B.

F. Plant climbing or sprawling or prostrate H.

H. Valves of legume densely short-pilose, setose-spinulose on margins; leaflets glabrous above, 2 pairs, upper pair 3-4 cm long; legume 2-2.5 cm long, 6-8 mm wide; p. 44 Mimosa Maxonii Stan.

H. Valves of legume not pilose; margins and sometimes valves setose-spinulose; leaflets 2 pairs, appressed-setose or almost glabrous beneath I.

I. Branches densely or sparsely hirsute as well as with recurved spines; leaflets up to 2 cm long, 4-7 mm wide, strigose above and beneath; legume 1-1.5 cm long, 3-5 mm wide; p. 44. Mimosa panamensis (Bth.) Stan.

I. Branchlets glabrous or nearly so, with dense recurved prickles; leaflets 3-4 cm long, 10-15 mm wide, upper ones acute, glabrous above; legume 1-3 cm long, 8-10 mm wide; floral bractlets prominent, exceeding and obscuring subglabrous heads; p. 46. Mimosa Velloziana Mart.

B. Leaflets 4 to many pairs on a pinna, (3-)18 mm wide J.

J. Pinnae clustered at or near tip of petiole, 1-2 pairs; leaflets 4-9 pairs, glabrous above; stem or branches usually prickly; plant an herb or woody vine K.

K. Leaflets palmately veined at base, 5-15 mm wide, 3-4 pairs, 1-3 cm long; legume 3-4 cm long, 12 mm wide; p. 43 Mimosa Casta L.

K. Leaflets pinnately veined; pinnae 1-2 pairs; leaflets 4-8 pairs, 3-8 mm wide, ovate or oval or oblong; legume 1.5-2 cm long, 2-4-jointed L.

- L. Leaflets 7-9 mm long, 3-8 mm wide, glabrous above, setose-hispid beneath, rounded at tip; legume 1.5-2 cm long, 4 mm wide; valves glabrous, pilose or setose; p. 44, 46 Mimosa Skinneri Bth.
- L. Leaflets 8-9 mm long, 4 mm wide, much more densely hispid; valves of legume with stout stiff spines or hispid; p. 44, 46 . . . Mimosa germana Stan. & Wms.
- J. Pinnae remote, pairs 4-12 mm apart, 2-10 pairs; legume 2-8 cm long, 4-25 mm wide; leaflets 3-many pairs, 0.7-3 cm long; twigs with dense recurved wide-based prickles M.
- M. Legume not jointed, 2 cm long, 8-9 mm wide, densely setose, margins thick; leaflets 7-11 pairs, 14-19 mm long, 5-8 mm wide; p. 43 Mimosa canahuensis St. & St.
- M. Legume jointed, 6-10 cm long, glabrous or nearly so N.
- N. Glands of petiole and of axis of leaves large; leaflets densely hairy, largest ones 1-1.5 cm wide; pinnae 4-6 pairs; legume 1.5 cm wide, glabrous or nearly so in age, not red; p. 46 Mimosa Recordii B. & R.
- N. Glands of petiole and axis of leaves minute or none O.
- O. Petiole and axis of leaves without prickles; leaflets densely pilose above and beneath, 3-6 pairs, 1-2 cm long; pinnae 3-6 pairs; legume 3-5 cm long, velutinous-pilose, margins prickly or not; tree; p. 44, 45 Mimosa guatemalensis (Hook. & Arn.) Bth.
- O. Petiole and axis of leaves usually abundantly prickly; leaflets hairy beneath; legume glabrous, shiny; woody vine P.
- P. Pinnae 2-4 pairs; leaflets 6-9 pairs, 1-3 cm long, 1-1.5 cm wide, puberulent or almost glabrous above; legume up to 8 cm long, 1 cm wide, not on a stipe; p. 44, 58 Mimosa hondurana Britton
- P. Pinnae 3-10 pairs; leaflets about 15 pairs, 7-11 mm long, 2.5-5 mm wide, pilosulous above; legume about 6 cm long, 1.5 cm wide, on short stipe; p. 30, 46 Mimosa scalpens Stan.
- A. Leaflets 1-3(-3.5) mm wide, 4-many pairs on a pinna Q.
- Q. Legume winged, 4-7.5 cm long, 12-15 mm wide, on a stipe; wing serrate, often cleft; leaflets 6-7 mm long, 1-3.5 mm wide, widely rounded at tip, setulose or glabrate; pinnae 2-4 pairs; p. 44, illustr. 58 Mimosa hemiendytia Rose & Robinson
- Q. Legume not winged or unknown R.
- R. Pinnae clustered at or near tip of petiole, 1-5 pairs S.
- S. Pinnae 3-5 pairs; leaflets 30-60 pairs, glabrous above; p. 45 Mimosa polydactyla H. & B.
- S. Pinnae 1-2 pairs T.

- T. Leaflets pilosulous or puberulent above, 8-12 mm long, 2.5-3.5 mm wide; pinnae 1 pair; peduncles up to 2 cm long, appressed-hairy; legume unknown; p. 44.
 Mimosa guanacastensis Stan.
- T. Leaflets glabrous or glabrate above; stem and branches usually prickly U.
- U. Plant a shrub or tree; peduncles 3-4.5 cm long; leaflets 2.5-3.5 mm wide; legume 3 cm long, 7 mm wide, hairy, narrowed between seeds; p. 46.
 Mimosa zacapana St. & St.
- U. Plant an herb; pinnae 1-2 pairs; legume not narrowed between seeds V.
- V. Legume 3-4.5 cm long, 4-5 mm wide; valves glabrous, margins densely spiny; legume 7-11-jointed; pinnae 1 pair; leaflets about 8 pairs, 10 mm long, 3 mm wide, glabrous; p. 45. . Mimosa pinetorum Stan.
- V. Legume 1-2 cm long, 2-5-jointed; pinnae 1-2 pairs; margins of valves densely spiny; spines stout, stiff, or hispid W.
- W. Leaflets 4-8 pairs, 8-9 mm long, 4 mm wide, hispid, ovate, oval or oblong; legume 1.4-2 cm long; p. 44, 46 . Mimosa germana Stan. & Wms.
- W. Leaflets 15-25 pairs, 5-10 mm long, 3 mm wide, oblong or linear-oblong; margins of valves with dense long setae; legume 1-1.5 cm long, 3 mm wide; p. 45, illustr. 58. . . . Mimosa pudica L.
- R. Pinnae remote, pairs 4-12 mm apart; legume 2-8 cm long, 4-15 mm wide; leaflets 5-many pairs; pinnae 2-15 pairs X.
- X. Twigs densely scaly; pinnae 5-7 pairs; leaflets 25-35 pairs, 1-1.5 mm wide; p. 43.
 Mimosa Braçaatinga Hoehne
- X. Twigs not scaly; leaflets 3-8 mm long Y.
- Y. Legume 0.8-10 cm long, 2-8 mm wide; branches with few or usually many prickles; leaflets 4-many pairs; Z. cp. p.
- Z. Stem sparingly if at all prickly; prickles, if any, straight or recurved; legume 4 mm wide, setose; leaflets 5-30 pairs, 1-2 mm wide, glabrous or ciliate; pinnae 1-6 pairs; the 2 next following species are doubtfully distinct Aa.
- Aa. Pinnae 1-3 pairs; leaflets 5-20 pairs, 1-1.5 mm wide; petiole less than 1 cm long; legume less than 1 cm long, 1-3-jointed; p. 45
 Mimosa pusilla Bth.

- Aa. Pinnae 2-6 pairs; leaflets 15-30 pairs, 1-2 mm wide, sparsely ciliate; legume 8-15 mm long, densely long-setose; p. 43. Mimosa flavescens Splitgerber
- Z. Stem usually with many prickles; leaflets 6-many pairs, 1 mm wide or narrower; axis of leaves with or without prickles; pinnae 2-8 pairs; leaflets glabrous or nearly so or pubescent, obtuse or rounded Ab.
- Ab. Leaflets 3-nerved at base, 9-13 pairs; plant a shrub; pinnae 4-5 pairs; valves of legume hispid, densely spinose-hispid on margins; p. 44 . . . Mimosa hadrocarpa Molina
- Ab. Leaflets not 3-nerved at base; pinnae 2-8 pairs; plant shrubby or herbaceous Ac.
- Ac. Leaflets 8-10 pairs, 8-12 mm long; legume 0.8 cm long, 3-4 mm wide, about 2-jointed; pinnae 2-3 pairs; plant annual; p. 46 Mimosa teledactyla D. S.
- Ac. Leaflets 6-many pairs, 2-8 mm long; pinnae 2-8 pairs; plants shrubby or chiefly herbaceous; branches usually with many prickles Ad.
- Ad. Stems terete or nearly so; leaflets 6-many pairs; petiole and axis of leaves with or without prickles Ae.
- Ae. Legume about 12 mm long, 8 mm wide, joints 2 or 3; pinnae 3-6 pairs; twigs with many straight prickles; plant a shrub; stem usually prostrate, with appressed hairs; p. 43
- Mimosa dormiens H. & B.
- Ae. Legume 4-7 cm long, 3-4 mm wide, joints many; pinnae 2-8 pairs; stems erect, shrubby, with long, spreading, gland-tipped hairs; p. 46 . . .
- Mimosa somnians H. & B.
- Ad. Stems conspicuously angled; leaflets many pairs, 1 mm wide; legume 1-2.5 cm long, 5-6 mm wide, pilose, prickly on valves and margins, 3-5-jointed; petiole and axis of leaves densely prickly; twigs with dense recurved prickles; p. 44 Mimosa invisa Mart.
- Y. Legume 3-10 cm long, 8-25 mm wide, or unknown; branches usually with many prickles; leaflets 4-many pairs Ae. cp. p.
- Ae. Axis of leaves (rachis) with prickles or setiform appendages; pinnae 3-15 pairs Af.
- Af. Legume densely brownish-hispid, 3-8 cm long, 10-12 mm wide; leaflets about 1 mm wide; pinnae 7-15 pairs; P. 37, 44, illustr. 58 Mimosa pigra L.
- Af. Legume glabrous or nearly so or puberulent, 5-6 cm long; leaflets 15-25 pairs; woody vine Ag.

- Ag. Legume 1 cm wide, on long stipe, attenuate to tip, not jointed, puberulent when young, margins and stipe spiny; pinnae 5-8 pairs; leaflets 1 mm wide; p. 19, 43 . Mimosa Donnell-Smithii (B. & R.) St. & St.
- Ag. Legume 1.5 cm wide, on short stipe, rounded at tip, glabrous, margins sometimes spiny; pinnae 3-10 pairs; leaflets 7-11 mm long, 2.5-5 mm wide; p. 27, 46 Mimosa scalpens Stan.
- Ae. Axis of leaves without prickles; legume 3-9 cm long or unknown Ah.
- Ah. Leaflets 6-8 mm long, hairy when young, usually above and beneath, 10-15 pairs; legume unknown; p. 43
 Mimosa costaricensis Bth.
- Ah. Leaflets 3-6 mm long, glabrous or sparsely and minutely pilose or sometimes ciliate, many on a pinna; pinnae 6-10 pairs Ai.
- Ai. Legume 2-2.5 cm long, glandular-hairy, jointed; pinnae 6-9 pairs; leaflets 4-6 mm long; p. 43
 Mimosa Calderonii B. & R.
- Ai. Legume 3-6.5 cm long, glabrous, not jointed; branches prickly but almost glabrous; leaflets 3-5 mm long; pinnae 6-10 pairs; p. 19, 45 . Mimosa platycarpa Bth.

ANNOTATED LIST OF BIPINNATE LEGUMINOSAE IN NICARAGUA AND OTHER COUNTRIES OF CENTRAL AMERICA

Genera and species are arranged alphabetically.

Data supplied by Mr. Ray Angelo are followed by his name.

Acacia Allenii Janzen, Contr. Smithsonian Bot. 13: 53. 1974. Costa Rica (FLAS). Similar to Acacia melanoceras Beurl. according to Janzen, from which he separates it by A. Allenii having only 0-6 glands on the petiole. Description excerpted from Janzen, l. c. Pinnules (leaflets) 8-11 mm long, 2-3.5 mm wide up to 60 per pinna. Pinnae 7-10 cm long, up to 40 per leaf. Petiole with 2-10 widely spaced nectaries. Rachis with 1-2 nectaries at bases of pinnae. Swollen stipular thorns dark-brown, up to 4 cm long, 1 cm wide at base, external thorn walls with low and rounded longitudinal ridges, p. 53, l. c. Pinnules (10-)20-30-jugate, 5-10 mm long, 1-4 mm wide. Translation from the Latin mine.

Acacia angustissima (Miller) Kuntze, Rev. Gen. 3, pt. 2: 147, 1898. Synonyms: Acaciella Rensonii B. & R., N. Amer. Fl. 23: 101. 1928. Acacia Pittieriana Standley, Field Mus. Bot. 18: 489. 1937.

Petiole of mature leaves 2-4 cm long. Leaflets 1 mm wide. Angelo.

Mexico to middle South America, Fl. Panama 5: 269. 1950.

Nicaragua, Dept. Matagalpa, Santa Maria de Ostuma. Harri-
man 14795 (OSH, SEYM).

Acacia Baileyana F. Mueller, Trans. & Proc. Ray Soc. Vict. 24: 168. 1888.

Pinnæ 2-3 pairs. Leaflets 12-15 pairs, 4-5 mm long, 0.5-1 mm wide. Petiole without a gland, very short, about 1 cm long or less. Axis of leaves glabrous. Leaves not sensitive. Legume 3.5-10 cm long, 12 mm wide, flat, glaucous, sometimes narrowed between seeds. L. H. Bailey, Manual 431. Racemes of heads 8-11 cm long, often drooping; racemes slender. Flowers yellow.

Florida (FLAS), Costa Rica.

Acacia centralis (Britton & Rose) Lundell, Contr. Univ. Mich. Herb. 4: 7. 1940.

One or two glands very close to tip of rachis; glands on petiole also, near middle. Leaflets 0.5 mm wide. Axis of leaves minutely but clearly pubescent. Angelo.

Guatemala, Salvador. Type coll. near San Salvador.

Acacia Collinsii Safford, Science II. 31: 677. 1910.

Synonym: Acacia costaricensis Schenck, Repert. Sp. Nov. 12: 361, 1913, according to Jensen. Type: Honduras, Dept. Santa Barbara, San Pedro de Sula. Thieme 5216 (Herb. Capt. John Donnell Smith).

Acacia panamensis Schenck, Fedde Rep. Sp. Nov. 12: 362. 1913.

Mexico, British Honduras, Guatemala, Honduras, Salvador.

Nicaragua, Costa Rica, Panama. Many localities in Nicaragua, according to Janzen.

Nicaragua, Dept. Leon, Rio Tamarinda. Neill N181(MSC, SEYM).

Dept. Rivas, La Virgen. Nichols 1214 (ENAG, SEYM).

Acacia Cookii Safford, Science II. 31: 677. 1910.

Mexico, British Honduras, Guatemala. Leaflets less than 1 mm wide.

Acacia cornigera (L.) Willd., Sp. Pl. 4: 1080. 1806.

Synonyms: Acacia spadicigera Schlechtendal & Chamisso, Linnaea 5: 594, 1830.

Acacia nicoyensis Schenck in Fedde Rep. Sp. Nov. 12: 360.

1913. See Janzen, Contr. Smithsonian Bot. 13: 53. 1974.

See also Memoirs N. Y. Botanical Garden 25: #1: 26.

Pinnæ 2-8 pairs; leaflets 15-20 pairs on a pinna, 5-7 mm long, 1.5-2 mm wide. Petiole with a gland near summit; gland often on axis of leaves. Or leaflets 7-10.5 mm long, 2 mm wide.

Spines 2-8 cm long, hollow. Fieldiana Bot. 24: 10. 1946.

Legume 3-5 cm long, terete, with long spine-like beak.

Mexico, British Honduras, Guatemala, Honduras, Salvador, Nicaragua, Costa Rica (FSU), Cuba.

Nicaragua, coll. Janzen: Depts. Esteli, Esteli; Matagalpa, Matagalpa; Dept. Leon, Leon; Rivas, Penas Blancas., l. c.

Dept. Masaya, Lake Masaya. Nichols 120 (ENAG, MO, SEYM).

Dept. Rivas, La Virgen. Nichols 1407 (ENAG, MO, SEYM).

Acacia dealbata Link, Enum. Hort. Berol. 445, 1821.

Leaflets about 0.5 mm wide. Flowers in a head.

Description in Bailey's Encyclopedia. Guatemala.

Acacia Deamii (Britton & Rose) Standley, Field. Mus. Bot. 11: 158, 1936. Leaflets 0.15-1.5 mm, mostly 1 mm wide.

Axis of leaves slightly pubescent. Stipe of legume 5-10 mm long. Angelo. Guatemala.

Acacia dolichostachya Blake, Biol. Sci. Wash. 34: 43, 1921.

Leaflets 0.75-1 mm wide. Angelo. Guatemala.

Acacia Donnelliana Safford, Journ. Wash. Acad. Sci. 4: 361. 1914. Type from Honduras. Reported from Guatemala in N. Amer.

Fl., but the locality is in Honduras, as reported in Fl. Guatemala, p. 28, under the name Myrmecodendron Donnellianus (Safford) Britton & Rose.

This species said to be much like *A. globulifera* but "easily distinguished by its dark-colored polished spines and much longer vegetative leaves". Journ. Wash. Acad. Sci. 4: 361. 1914.

Acacia Farnesiana (L.) Willd., Sp. Pl. 1083. 1806.

Leaflets 1 mm wide. Texas, La., Ga., Fla., Mexico, Panama (FLAS).

Nicaragua, Dept. Matagalpa, Calabazas. Seymour & Atwood

2584 (B, BM, DUKE, ENAG, F, FLAS, GH,

HARTWICK, MICH, MO, NY, OSH, REED, SEYM, SMU, UC, WDP).

Dept. Boaco, Potrerillos. Seymour 2355 (BM, ENAG, F, GH, MO, SEYM, SMU).

Dept. Granada, Granada. Dudgey 1099 (BM, ENAG, F, GH, SEYM, SMU).

Acacia Gentlei Standley, Field Mus. Bot. 22: 77, 1940.

Legumes flattened. Angelo.

British Honduras, Guatemala.

- Acacia globulifera Safford, Journ. Wash. Acad. Sci. 5:360. 1915.
Pinnae about 15 pairs. Leaflets 3-4 mm long. For description,
see N. Amer. Fl. 23, pt. 2, p. 93. 1928. Pinnae 2-5 pairs.
Leaflets 6-12 pairs on flowering branches. Spines ivory-white,
4-5 cm long. Fruit unknown., l. c.
- Acacia glomerosa Benthams, Lond. Journ. Bot. 1: 521, 1842.
Leaflets 2-3 mm wide. Yucatan, British Honduras, Salvador
to Panama, Colombia to Brazil. Fl. Guatemala 5: 10. 1946.
- Acacia Hayesii Benthams, Trans. Linn. Soc. 30: 524. 1875.
Synonym: Acacia acanthophylla (Britton & Rose) Standley, Field
Mus. Bot. 18: 488, 1937. Panama (GH).
Leaflets 2 mm wide Legume 8-10 mm long. Angelo.
- Acacia Hindsii Benthams in Hook. Lond. Journ. Bot. 1: 504.
1842. Mexico, Guatemala, Honduras (FSU), Salvador,
Nicaragua, according to Janzen 116-118, 1974.
Nicaragua, Dept. Leon, Leon. Janzen.
Dept. Chinandega, Ameyá. Maxon, Harvey & Va-
lentine 7176 (US).
- Acacia hirtipes Safford, Journ. Wash. Acad. Sci. 4: 367. 1914.
Guatemala.
- Acacia macracantha Humboldt & Bonpland ex Willd., Sp. Pl. 4:
1080, 1806. Leaflets scarcely 1 mm wide.
Florida, Antigua, Tortola, Dominica, Jamaica (FLAS).
- Acacia mayana Lundell, Carnegie Inst. Wash. Publ. 478: 210,
1937. Mexico, Guatemala, Costa Rica (FLAS).
- Acacia melanoceras Beurl., Sv. Vet. Acad. Handl. 1854: 123,
1856. Synonym: Acacia multiglandulosa Schenck, Repert.
Nov. Sp. Fedde 12: 362, 1913.
Discussed in Journ. Wash. Acad. Sci. 5: 357-358, 1915.
Glands on petiole 8-30. Cp. Acacia Allenii.
Panama. Safford 1915 "described A. melanoceras under the
name of A. multiglandulosa", according to Janzen p. 43.
- Acacia pennatula Schlechtendal & Chamisso) Benthams, Lond.
Journ. Bot. 1: 390, 1842. Guatemala.
Nicaragua, Dept. Esteli, Bosque. Neill 7346 (MO, SEYM,
SMU, UCA).
Esteli. Neill 7187 (MO, SEYM,
SMU, UCA).
- Acacia polypodioides Standley, Contr. U. S. Nat. Herb. 20: 184.
1919. Veins of leaflets similar to those in Acacia riparioides
which has prickles on the branches; spines none and
petiole without glands in A. polypodioides.
Guatemala. Nicaragua, Dept. Granada, Granada. Baker
2325 (GH).
- Acacia riparia HBK., Nov. Gen. & Sp. 6: 276, 1824.
Leaflets about 1 mm wide. Jamaica (FLAS).

Acacia riparioides (Britton & Rose) Standley, Field Mus. Bot. 3: 277, 1930.

Yucatan, Salvador. As to veins of leaflets, cp. *Acacia poly-podioides*.

Acacia Ruddiae Janzen, Smithsonian Contr. Bot. 13: 1-131. 1974.

Acacia tenuifolia (L.) Willd., Sp. Pl. 4: 1091, 1806.

Leaflets less than 1 mm wide. Costa Rica, Panama.

Acacia tortuosa (L.) Willd., Sp. Pl. 4: 1083, 1806.

Gland of petiole generally at summit, more or less circular, raised and cup-like in Central America. In West Indies, gland more commonly near middle and elliptical. In some Central American specimens, I am unable to discern a gland on petiole. Leaflets 0.78-1.5 mm wide, mostly 1 mm. Angelo.

Spines at nodes.

Florida (FLAS), Mexico, Jamaica (FLAS).

Acacia villosa (Sw.) Willd., Sp. Pl. 4: 1067, 1806.

Synonym: *Acacia Oerstedii* (Britton & Rose) Standley, Field Mus. Bot. 18: 489, 1937.

Petiole and axis of leaves normally without glands. Leaflets 8-9 mm long, 1-4 mm wide. Angelo.

Adenanthera pavonina L., Sp. Pl. 384, 1753.

For description, see Little, E. L. & F. H. Wadsworth. Common Trees of Puerto Rico & the Virgin Islands 144, 1964, who report it as "very rare in Central America."

Leaflets 19-44 mm long, 10-22 mm wide.

Albizzia adinocephala (Donnell Smith) Britton & Rose, N. Amer. 23: 47. 1928. Leaflets 1-2 cm wide. Costa Rica, Panama.

Albizzia caribaea (Urban) Britton & Rose, N. Amer. Fl. 23: 44, 1928.

Leaflets 1-2 mm wide, varying from acute to obtuse. Legume narrowed gradually to base and stipe; stipe 4-8 mm long.

Angelo.

Nicaragua, Dept. Managua, Santa Clara. Neill 2882 (SEYM, UCA).

Albizzia Hummeliana Britton & Rose, Tropical Woods 8: 7, 1926.

Leaflets 3-4 mm wide. "I would say that the rachis lacked glands. However the places where leaflets have detached give the appearance of cupular glands that I have seen in other species of the family." Angelo.

British Honduras, Record (YU no. 8795); Winzerling; both 1926.

Type: 1,209,912 (US).

Albizzia idiopoda (Blake) Britton & Rose, N. Amer. Fl. 23: 44. 1928.

Leaflets 1.5-3 mm wide. Angelo. British Honduras, Guatemala.

Albizzia Lebbeck (L.) Bentham, Hook. Lond. Journ. Bot. 3:87, 1844.

"Leaves mostly bipinnate", Ann. Mo. Bot. Gard. 37:254, 1950.

Leaflets 1-2 mm wide. Florida, Puerto Rico (FLAS), Florida, Puerto Rico, British Honduras, Guatemala?

Albizzia longepedata (Pittier) Britton & Rose, N. Amer. Fl. 23: 46, 1928.

Synonyms: Pithecellobium longepedatum Pittier, Contr. U. S.

Nat. Herb. 20: 464, 1922.

Pseudosamanea guachapele (HBK.) Harms, Notizbl. 11: 54. 1930.

For synonymy, see Phytologia 44: 378. 1979.

Guatemala, Salvador, Costa Rica, Panama, Colombia, Venezuela. Fl. Guatemala 5: 18, 1946.

Albizzia Lundellii Standley, Tropical Woods 52: 26, 1937.

Synonym: Ablizzia rubiginosa Standley, Carnegie Inst. Wash.

Publ. 461: 58, 1935, non Miquel 1855.

Leaflets about 1 mm wide. Angelo.

Albizzia tomentosa (Micheli) Standley, Journ. Wash. Acad. Sci. 13: 6, 1953. Leaflets (1-)2-6(-10) mm wide. Angelo.

Guatemala.

Caesalpinia affinis Hemsley, Diag. Pl. Mex. 8, 1878.

Leaflets (7) 11-13 mm wide. Angelo.

Type: Guatemala. Skinner.

Caesalpinia Bonduc (L.) Roxb., Hort. Beng. 32, 1814.

Florida (FLAS), Grand Cayman Island (FLAS), Guatemala.

Caesalpinia Conzattii (Rose) Standley, Trop. Woods 37: 34, 1934.

Leaflets 9-10 mm wide. Angelo. Guatemala.

Caesalpinia coriaria (Jacq.) Willd., Sp. Pl. 2: 532, 1799.

Synonym: Poinciana coriaria Jacq., Del. Stirp. Amer. 123, 1763.

Pinnæ about 4-15. Leaflets up to 2 mm wide.

Caesalpinia Crista L., Sp. Pl. 380, 1753.

Leaflets 1-2.5 cm wide.

Florida (FLAS), Mexico (FLAS), Guatemala, Costa Rica, Panama. Nicaragua, Dept. Managua, Masachapa. Nichols

1370 (ENAG, GH, MO, SEYM, SMU).

Caesalpinia eriostachys Bentham, Bot. Voy. Sulphur 88, 1844.

Leaflets 3-5 mm wide.

Guatemala, Costa Rica, Panama (FLAS).

Caesalpinia exostemma DC., Prodr. 2: 483, 1825.

Leaflets 5-15 mm wide. Angelo. Mexico, Guatemala (FLAS).

Caesalpinia Gaumeri Greenman, Field Mus. Bot. 2: 330, 1912.

Pinnæ 4-9 per leaf. Leaflets 7-12, not paired, 7-15 mm wide.

Angelo. Guatemala.

Caesalpinia pulcherrima (L.) Swartz, Obs. Bot. 166, 1791.

Leaflets 5-10 mm wide.

Florida (FLAS), Mexico, British Honduras to Salvador and Panama (FLAS, FSU), Jamaica, Mariana Islands, Tinian (FLAS).

Nicaragua, Dept. Matagalpa, Sebaco. Atwood 2472 (GH, MO, SEYM); Mena 2510 (SEYM).

Dept. Managua, Managua. Zelaya 2250 (B, ENAG, F, FLAS, GH, MO, MSU, NY, REED, SEYM, SMU, UC, YU).

Dept. Masaya, Lake Masaya. Dudey 57 (B, BM, F, FLAS, GH, MICH, MO, NY, SMU, TEX, UC, VT, WDP).

Dept. Carazo, Santa Teresa. Atwood 1278 (ENAG, GH, MO, SEYM, SMU).

Caesalpinia Recordii Britton & Rose in Standley Trop. Woods 7: 6, 1926. Leaflets 12-16 mm wide. Angelo. Guatemala.

Caesalpinia urophylla (Donnell Smith) Standley, Field Mus. Bot. 18: 513, 1937. Costa Rica.

Caesalpinia velutina (Britton & Rose) Standley, Tropical Woods 34: 40, 1933.

Leaflets 2-2.5 cm wide. Angelo. Guatemala.

Caesalpinia vesicaria L., Sp. Pl. 381 1753.

Leaflets 1-3 cm wide. Angelo. Petiolules about 2-3 mm long. Guatemala, Cuba (FLAS).

Caesalpinia violacea (Miller) Standley, Carnegie Inst. Wash. Publ. 461, 1935.

Pinnæ 2-6 pairs. Leaflets 4-8 pairs, ovate-oblong, 2-5 cm long, obtuse or acute, often puberulent. Legume 6-10 cm long, 2.5-3 cm wide, glabrous or nearly so, rounded at tip, on short stipe. Fl. Cuba 2: 80, 1951. Translation mine. Guatemala.

Caesalpinia yucatanensis Greenman, Field Mus. Bot. 2: 252. 1907. Leaflets 6-17 mm wide. Angelo. Guatemala.

Calliandra belizensis (Britton & Rose) Standley, Field Mus. Bot. 4: 309, 1929.

Leaflets 8-12 mm long, linear-oblong. Guatemala.

Calliandra Brenezii Standley, Field Mus. Bot. 18: 491, 1937. Costa Rica.

Calliandra Caeciliae Harms, Repert Sp. Nov. 17: 89, 1921. Leaflets about 1 mm wide. Guatemala.

Calliandra capillata Benthham, Lond. Journ. Bot. 3: 98, 1844.

Leaflets 1-2 cm long, 6-27 mm wide, widely oblong to widely obovate. Mexico, British Honduras, Guatemala, Salvador.

Calliandra caracasana (Jacq.) Benth in Trans. Linn. Soc. 30: 543, 1875.

Leaflets about 1 mm wide.

Fl. Guatemala p. 26 states that this species is South American, scarcely distinguishable from Calliandra portoricensis, but Fl. Panama lists Calliandra porotricensis Benth with a question mark as a synonym of Calliandra caracasana.

Calliandra carcerea Standley & Seyermark, Field Mus. Bot. 23: 161, 1944.

Leaflets mostly 4-8 mm wide. Guatemala.

Calliandra confusa Sprague & Riley, Kew Bull. 371, 1923.

Synonym: Calliandra similis Sprague & Riley, Kew Bull. Misc. Inf. 371, 1923.

Leaflets 3-10 mm long, 1 mm wide, almost always 0.5-1.5 mm wide, a few specimens 2-3 mm wide. Angelo.

British Honduras, Guatemala, Costa Rica, Panama.

Calliandra costaricensis (Britton & Rose) Standley, Field Mus. Bot. 18: 492, 1937.

For description, see N. Amer. Fl. 23: 67, 1928.

Petiole 5-6 cm long. Legume only 3 mm wide, glabrous, very elastic, coiled in age, about 8 cm long. Costa Rica.

Calliandra Cumingii Benth in Hook. Journ. Bot. 2: 140, 1840.

Leaflets 11-20 pairs on a pinna, 1-2 mm wide. Legume more or less pilose (even wooly on occasion). Angelo.

Panama, Cuming 1248. Possibly Mexico and Venezuela and Colombia.

Calliandra emarginata (Humboldt & Bonpland) Benth, Lond. Journ. Bot. 3: 95, 1844.

Leaflets 8-27(-40) mm wide. Angelo. Scarcely separable from C. tergemina Benth according to Fl. Guatemala, p. 23. Florida (FLAS), Guatemala.

Calliandra glaberrima (Benth) Britton & Killip, Ann. N. Y. Acad. Sci. 35: 134, 1936. Panama.

Calliandra grandiflora (L'Her.) Benth, Hook. Journ. Bot. 2: 139, 1840.

In habit similar to Mimosa pigra L. but without thorns. Leaflets about 1 mm wide. Angelo.

Mexico (FLAS), Guatemala.

Nicaragua, Dept. Chontales, Santo Tomas. Atwood 2726 (SEYM).

Calliandra Houstoniana (Miller) Standley, Contr. U. S. Nat.

Herb. 23: 386, 1922. Leaflets 0.75-2 mm wide. Angelo. Mexico, Guatemala, Honduras.

Managua, Dept. Nueva Segovia, Dipilto. Budier 6351 (GH, MO, SEYM, SMU).

Nicaragua, Dept. Nueva Segovia, Jalapa. Atwood, Marshall & Neill 6818 (SEYM).

Dept. Esteli, Cerro Santa Rosa. Seymour 7628b (SEYM); Hall & Bockus 7610 (SEYM); Nelson 7621a (SEYM, UCA).

Calliandra Magdalenae (Bert.) Benth. Journ. Bot. 5: 102, 1846.

Synonym: Acacia Magdalenae Bert., ex DC. Prodr. 2: 455. 1825.

Calliandra Tonduzii (Britton & Rose) Standley, Field Mus. Bot. 4: 309, 1929.

Fl. Guatemala p. 27 treats Calliandra Tonduzii as a distinct species, whereas Fl. Panama Part 5, fasc. 2 p. 259, 1950 treats them as synonyms.

Leaflets 3 mm wide.

Calliandra mexicana Brandegee, Univ. Calif. Publ. Bot. 10: 183, 1922.

Leaflets 8-17 mm wide. Angelo.

Yucatan, Guatemala.

Nicaragua, Dept. Jinotega, San Rafael del Norte. Atwood A264 (MSC, SEYM).

Calliandra Molinae Standley, Ceiba 1: 39, 1950.

Pinnae 3 pairs, 3-6 cm long; leaflets commonly 9-14 pairs on a pinna, sessile, oblong-oval, 5-9 mm long, tip rounded, base, obliquely subtruncate, above minutely hirtellous or soon glabrous and whitish-papillose, ciliate, beneath spreading-pilose. Flowers in dense heads. Legume not described. Ceiba 1: 39, 1950. Honduras.

Calliandra mollis Standley, Contr. U. S. Nat. Herb. 17: 431, 1914.

No glands evident on petioles. Leaflets (largest) mostly 3 mm wide or 1-2 mm wide. Angelo. Petiole not described, l. c. Legume about 8 cm long, 6 or 7 mm wide, rounded-obtuse, short-beaked, attenuate to base, densely pilose, about 8-seeded, l. c.

Costa Rica, Nicoya. Tonduz 13536 (US), type.

Calliandra pallida (Britton & Rose) Standley, Field Mus. Bot. 18: 492, 1937.

Synonym: Anneslia pallida Britton & Rose, N. Amer. Fl. 23: 65, 1928.

"Pinnae 2-4 pairs; leaflets 14-16 pairs, narrowly oblong, 4-6 mm long, acute, glabrous, ciliate, pale and reticulate beneath" Legume not mentioned., l. c. Costa Rica.

Calliandra penduliflora Rose, Contr. U. S. Nat. Herb. 5: 193, 1899.

Leaflets 3-5-nerved at base, 4-6 pairs, very unequal and very oblique at base, 4-30 mm wide, typically 10-20 mm wide. An-

oblique at base, 4-30 mm wide, typically 10-20 mm wide. Angelo. Largest leaflets 4-5 cm long, rounded at tip, pubescent both sides. l. c.

Calliandra Pittieri Standley, Contr. U. S. Nat. Herb. 18: 104, 1916.

Leaflets less than 1 mm wide. Panama, Colombia.

Calliandra portoricensis (Jacq.) Benth, Lond. Journ. Bot. 3: 99, 1844. See note under Calliandra caracasana.

Leaflets 1-3 (4) mm wide. Angelo.

S. Mexico, British Honduras, Salvador to Costa Rica and Panama, Costa Rica (FSU), British Virgin Islands, Tortola (FLAS), Jamaica.

Calliandra Quetzal Donnell Smith, Enum. Pl. Guat. 8: 36, 1907. Largest leaflets 1.8-2.2 mm wide. Guatemala.

Calliandra rhodocephala Donnell Smith, Bot. Gaz. 49: 454, 1910. Type: puerto Barrios, Izabal. C. C. Deam 6015.

Leaflets 1.5-4.5 cm wide, glabrous above and beneath. Angelo. Nicaragua, Dept. Zelaya, Madregara. Narvaez 3059 (ENAG, GH, MO, SEYM, SMU).

Calliandra Seemannii Benth, Seem. Voy. Herald 116, pl. 22, 1853. Leaflets 1-1.5 cm wide. Costa Rica, Panama.

Calliandra tapirorum Standley, Ceiba 1: 40, 1950.

Pinnæ 3-5 pairs. Leaflets 8-16 pairs, oblong, about 6 mm long, 2 mm wide, obtuse and apiculate. Legume 4-angled, 7-9 cm long, about 8 mm wide, moderately densely hispidulo tomentose. l. c.

Calliandra tetragona (Wild.) Benth, Hook. Journ. Bot. 2: 139, 1840. S. Mexico, British Honduras, Honduras,

Costa Rica, NW South America. Leaflets about 1 mm wide.

Calliandra Wendlandii Benth, Trans. Linn. Soc. 30: 556, 1875. Known from original collection only.

Perhaps a synonym of Calliandra emarginata (Humboldt & Bonpland) Benth. See comment in Fl. Guatemala p. 259.

Delonix regia (Bojer) Raf., Fl. Tell. 2: 292, 1836. Poinciana. Leaflets 3-4 mm wide.

Florida (FLAS), Mexico (FLAS), Jamaica (FLAS), Mariana Islands, Tinian (FLAS).

Nicaragua, Dept. Managua, Managua. Zelaya 2258 (B, DUKE, FLAS, SEYM, YU); Robbins 6090 (DUKE, FLAS, REED, SEYM, US); Seymour 6283a (SEYM).

Desmanthus virgatus (L.) Willd., Sp. Pl. 4: 1047, 1806.

Leaflets 1-2 mm wide.

a. Erect shrub; gland of petiole large var. virgatus

z. Prostrate herb; gland of petiole small
 var. depressus (Willd.) Turner

- Var. depressus (Humboldt & Bonpland ex Willd.) B. L. Turner Field & Lab. 18: 61, 1950. Synonym: Desmanthus depressus Humboldt & Bonpland ex Willd., Sp. Pl. 4: 1046, 1806. Adams, C. D. Flowering Plants of Jamaica, 1972, treats Desmanthus depressus as a distinct species. Florida, British Virgin Islands, Tortola, Jamaica, Panama (FLAS).
- Var. virgatus. Similar in habit to Schrankia, but without prickles, whereas Schrankia bears abundant fine prickles. Florida, Mexico, Jamaica, Dominica, E. Caicos (FLAS), Panama (FSU).
- Entada gigas (L.) Fawcett & Rendle, Fl. Jamaica 4: 124, 1920. See Fl. Panama, Ann. Mo. Bot. Gard. 37: 310, 1950. Leaflets 3 cm wide. Central America, N. South America, West Indies, West Africa, Philippine Islands (FLAS).
- Entada patens (Hooker & Arnold) Standley, Contr. U. S. Nat. Herb. 23: 349, 1922. Leaflets 4-40 mm wide, mostly 10-25 mm wide. Angelo. Mexico, Salvador, Nicaragua.
- Entada polystachia (L.) DC., Mem. Leg. 434, 1825. Synonym: Mimosa polystachia L., Sp. Pl. 520, 1753. Mexico, Guatemala (FLAS, FSU), Jamaica. Nicaragua, Dept. Chinandega, Potosi. Marshall & Neill 6611 (SEYM); Neill 6616 (ENAG, GH, MO, SEYM). Leaflets 5-18 mm wide. Valves jointed, in age falling from persistent margins. (FLAS).
- Enterolobium cyclocarpum (Jacq.) Griseb., Fl. Brit. W. Ind. 226, 1860. Leaflets 2-4 mm wide. Angelo. Fruit called "Ears". Florida, Mexico, Costa Rica. Nicaragua, Dept. Chinandega, Potosi. Fruit floating in a brook, near warm spring. Seymour 7113, 24 Apr. 1975. Specimens lost.
- Enterolobium Schomburgkii Benthams, Trans. Linn. Soc. 30: 599, 1875. Leaflets 2-4 mm long, about 0.5 mm wide. Angelo. Mexico, Guatemala, Panama, Guianas, Brazil.
- Leucaena brachycarpa Urban, Symb. Antill. 2: 265, 1900. Leaflets 0.5-1 mm wide. Angelo. Guatemala.
- Leucaena diversifolia (Schlechtendal) Benthams, Hooker, Journ. Bot. 4: 417, 1842. Leaflets 0.5-2 mm wide. Angelo. Guatemala.
- Leucaena guatemalensis Britton & Rose, N. Amer. Fl. 23: 126, 1928. Leaflets 0.5-1.5 mm wide. Angelo. Florida (FLAS), Guatemala.

Leucaena latisiliqua (L.) Gillis, Taxon 23: 190, 1974.

Mimosa glauca L., Sp. Pl. ed. 2: 1504, 1763; non Sp. Pl. 520, 1753.

Acacia glauca (L.) Moench, Meth. Pl. 1794.

Leucaena glauca (L.) Bentham, Hooker, Journ. Bot. 4: 416,

Leucaena leucocephala (Lam.) de Witt, Taxon 10: 64, 1961.

The distinctions by which deWitt differentiates Leucaena glauca and Leucaena leucocephala are almost entirely differences in size.

Leaflets 8-15 mm long, 2-3 mm wide, acute. Legume cross-striate. Legume 5-9 cm long, 5-20 mm wide; seeds 1-8.

British Honduras (FSU), Guatemala, as Leucaena glauca.

Nicaragua, Dept. Boaco, Boaco. Atwood 5404 (BM, ENAG, FLAS, GH, MO, NY, SEYM, SMU, UC).

Dept. Managua, Managua. Zelaya 2266 (SEYM):
Atwood 2550 (SEYM).

Leucaena multicapitula Schery, Ann. Mo. Bot. Gard. 37: 302, 1950. Leaflets 7-25 mm wide. Panama.

Leucaena Shannonii Donnell Smith, Bot. Gaz. 57: 419, 1914.

Type from Salvador, Cojutepeque.

Leaflets 12-22 mm long; 4-9 mm wide. Angelo.

Nicaragua, Dept. Zelaya, Bluefields, El Bluff. Hamblett 614 (MO, SEYM).

Dept. Matagalpa, Matagalpa. Zelaya 2313 (ENAG, SEYM).

Dept. Boaco, Camoapa. Seymour 3528 (GH, MO, SEYM).

Dept. Chontales, Juigalpa. Neill 7284 (GH, MO, SEYM, SMU, UCA).

Lysiloma acapulcense (Kunth) Bentham, Lond. Journ. Bot. 3: 83, 1844.

Stipe 5-7 mm long. Angelo. Guatemala.

Lysiloma auritum (Schlechtendal) Bentham, Lond. Journ. Bot. 3: 83, 1844.

Axis of leaves densely pubescent, 6-14 cm long, typically 10 cm long. Angelo. Guatemala.

Lysiloma bahamense Bentham, Lond. Journ. Bot. 3: 82, 1844.

Leaflets 8-12(-15) mm long, 2-4 mm wide. Cp. Leucaena Shannonii.

Florida, Bahama Islands (FLAS), Photo of type in Taxon 23: 189, 1974.

Nicaragua, Dept. Leon, Volcan Momotombo. Neill 7814 (FLAS, GH, MO, SEYM, SMU, UCA).

Lysiloma desmostachys Bentham, Lond. Journ. Bot. 3: 84, 1844.

Stipe must be carefully distinguished from pedicel. A stipe is above calyx; a pedicel is below calyx.

Mexico, British Honduras, Salvador, Nicaragua.

Nicaragua, Dept. Leon, Volcan Momotombo. Neill 7333 (BM, GH, MO, NY, SEYM, SMU, UCA).

Dept. Managua, Apoyeque. Marshall & Neill 6698 (ENAG, MO, SEYM).

Esquipulas. Hall & Bockus 7981 (B, BM, FLAS, GH, MO, NY, OSH, REED, SEYM, SMU, TEX, UCA).

Lysiloma Kellermanii Britton & Rose, N. Amer. Fl. 23: 81, 1928. Leaflets 3-5 mm long. Guatemala.

Lysiloma multifoliolatum Britton & Rose, N. Amer. Fl. 23: 84, 1928.

Stipules large, 1-1.7 cm long, lanceolate, falling early, very distinctive, often present on sterile specimens, conspicuous. Flowers in heads. Similar to Lysiloma desmostachys, which has flowers in spikes. For sterile specimens, the best distinction is pinnae 15-25 pairs in L. multifoliolatum; 7-15 pairs in L. desmostachys.

Honduras (FSU).

Nicaragua, Dept. Esteli, Cerro Quiabu. Neill 7757 (BM, FLAS, GH, MO, NY, SEYM, SMU, UCA).

El Bosque. Neill 7346 (MO, SEYM, SMU, UCA): may belong here.

E. of Esteli. Neill 7187 (MO, SEYM, SMU, UCA).

Mechapa. Dudgey 1023 (B, BM, FLAS, MSC, MO, NY, SEYM, SMU, UC, UCA).

Lysiloma Seemannii Britton & Rose, N. Amer. Fl. 23: 182. 1928. Known from type locality only.

Costa Rica, Bot. Voy. Sulphur, pl. 31, 1844.

Mimosa albida Humboldt & Bonpland ex Willd., Sp. Pl. 4: 1030, 1806.

Mimosa albida is easily mistaken for a Pithecellobium, but the strigose lower surface of the leaflets in M. albida is very characteristic and so are the stout recurved prickles of the branches. The larger leaflets are 11-16 mm wide; those toward the ends of the branches are smaller. Reduced lower inner leaflets are 10-11 mm long. The distinctions between the following varieties are not sharp; they intergrade. The Flora of Panama treats these varieties as synonyms of Momosa albida.

a. Leaflets densely setose-strigose above and beneath
 var. strigosa (Willd.) Robinson
 a. Leaflets almost glabrous above b.

- b. Leaflets covered beneath with setae; branches densely hairy; corolla puberulent or tomentulose
 var. floribunda (Willd.) Robinson
- b. Leaflets sparsely setose beneath; branches almost glabrous; corolla glabrous var. glabrior Robinson
- Mimosa albida var. indet. British Honduras (FSU).
- Mimosa albida var. floribunda (Willd.) Robinson, Proc. Amer. Acad. 33: 311. 1898. Nicaragua, Dept. Jinotega, Mirarflores, Neill 7201 (SEYM, UCA).
 Dept. Nueva Segovia, Cerro Mogoton. Atwood & Neill AN16 (MSC, SEYM).
 Dept. Esteli, Cerro Santa Rosa. Nelson 7619b (OSH, REED, SEYM, TEX, UCA).
- Mimosa albida var. glabrior Robinson, Proc. Amer. Acad. 33: 311. 1898. Nicaragua, Dept. Boaco, Camoapa. Seymour 3482 (MO, SEYM), 3527 (SEYM).
 Dept. Carazo, Casa Colorada. Seymour 555 (MO, SEYM).
- Mimosa albida var. strigosa. (Willd.) Robinson, Proc. Amer. Acad. 33: 311. 1898. Nicaragua, Dept. Leon, Telica. Dudgey, Hamblett & Nichols 200 (SEYM).
 Mexico (FLAS); British Honduras (FSU); Honduras (FSU).
- Mimosa Bracaatinga Hoehne, A Bracaatinga ou Abracaatinga 23: ill. 1930.
 Leaflets 4-6 mm long, 1-1.5 mm wide. Angelo. Guatemala.
- Mimosa Calderonii Britton & Rose, N. Amer. Fl. 23: 167. 1928. Type: El Salvador, El Angel, Calderon 1842.
 Leaflets 4-6 mm long. Costa Rica.
- Mimosa canahuensis Standley & Steyermark, Field Mus. Bot. 23: 163. 1944. Known from the type only, Guatemala, El Progreso, Mountain Canahui, Steyermark 43758.
 Leaflets 5-8 mm wide.
- Mimosa Casta L., Sp. Pl. 518, 1753.
 Leaflets 5-15 mm wide. Panama.
- Mimosa costaricensis Benthham, Trans. Linn. Soc. 30: 423, 1875. Leaflets 6-8 mm long. Costa Rica.
- Mimosa Donnell-Smithii (Britton & Rose) Standley & Steyermark, Field Mus. Bot. 23: 163, 1944. Leaflets 1 mm wide. Guatemala.
- Mimosa dormiens Humboldt & Bonpland ex Willd., Sp. Pl. 4: 1035, 1806 Leaflets 1 mm wide. Costa Rica.
- Mimosa flavescens Splitgerber in Hoen. & Vries Tijdschr 9: 110, 1842.
 Sparingly short-prickly or without prickles. Petiole and axis of leaves bristly with occasional prickles, glabrous aside from sparse marginal setae. Glands none. Leaflets 1-2 mm wide.

Angelo. Mexico to the Guianas, Fl. Costa Rica 502, 1937, but not included in Fl. Panama.

Mimosa germana Standley & Williams, Ceiba 1: 240, 1951.

Similar to Mimosa Skinneri. Leaflets 8-9 mm long, 4 mm wide. Costa Rica.

Mimosa guanacastensis Standley, Field Mus. Bot. 18: 502, 1937. Leaflets 4-9 pairs on a pinna, 8-12 mm long, 2.5-3.5 mm wide. Costa Rica.

Mimosa guatemalensis (Hooker & Arnold) Benth, Bot. Voy.

Sulphur 89, 1814. Type from Nicaragua, Realejo, according to Fl. Guatemala, p. 57, 1946.

Leaflets 4-18 mm wide.

Mimosa hadrocarpa Molina, Ceiba 1: 256, 1951. We have seen no specimens of this species. Costa Rica, l. c.

Mimosa hemiendyta Rose & Robinson ex Rose, Contr. U. S. Nat. Herb. 8: 32, 1903.

Leaflets 1-3.5 mm wide. Legume 7-8-jointed. Angelo. Guatemala, British Honduras (FSU).

Mimosa hondurana Britton, N. Amer. Fl. 23: 169, 1928.

Largest leaflets 1-1.5 cm wide. Angelo.

Guatemala; Honduras, Dept. Colon. Nelson & Martinez 1256. (FSU).

Mimosa invisa Mart., Flora 20 Beibl. 2: 121, 1837.

Leaflets 1 mm wide. Petiole 3.5-7 cm long. Axis of leaves 2.5-5 cm long. Pairs of pinnae 4-12 mm apart. Angelo. S. Mexico to Panama.

Mimosa Maxonii Standley, Contr. U. S. Nat. Herb. 17: 432, 1914. Type: Guatemala, vicinity of Mazatenango. Coll. Maxon & May 3497 (US).

Mimosa panamensis (Benth) Standley, Contr. U. S. Nat. Herb. 18: 104, 1916.

Terminal leaflets 4-7 mm wide. Costa Rica, Panama.

Mimosa pigra L., Cent. Pl. 1: 13, 1755.

Leaflets 0.7-1 mm wide. Florida, Mexico, Jamaica, Puerto Rico, Paraguay (FLAS). British Honduras, Honduras. Costa Rica (FSU).

Nicaragua, Dept. Nueva Segovia, Jalapa. Atwood, Marshall & Neill 6818 (SEYM).

Dept. Boaco, Camoapa. Seymour 3526 (GH, MO, (SEYM).

Dept. Rio San Juan, San Bartolo. Seymour 6150 (SEYM).

Dept. Granada, Tipitapa. Neill 2664 (SEYM, UCA). Vera Cruz. Hall & Bockus 7831 (BM, FLAS, GH, MO, NY, REED, SEYM, SMU, UC, UCA).

Mimosa pinetorum Standley, Field Mus. Bot. 11: 131, 1932.
Leaflets 3 mm wide. Guatemala.

Mimosa platycarpa Benthham, Trans. Linn. Soc. 30: 417, 1875.
Leaflets 0.5-1 mm wide. Angelo. Guatemala.

Nicaragua, Dept. Esteli, Esteli. Neill 7218 (SEYM, UCA).

Mimosa platycarpa and M. guatemalensis are the only species
in this genus in Fl. Guatemalensis which have flowers in spikes.

Mimosa polydactyla Humboldt & Bonpland ex Willd., Sp. Pl. 4:
1033, 1806.

Leaflets 4-9 mm long, 1-2 mm wide. Thorns wide-based,
black-tipped. Legume 4 mm wide. Panama to Brazil.

Mimosa pudica L., Sp. Pl. 518, 1753.

Leaflets 1-2 mm wide. Pubescence varies greatly.

Florida, Antiqua, Bahama Islands, Jamaica, Trinidad (FLAS).

Honduras (FSU, SEYM). Costa Rica (FSU).

Nicaragua, Dept. Zelaya, Bluefields. Zelaya 431 ((ENAG, GH,
SMU); Marshall 6545 (FLAS, US); Seymour 704
(SEYM); El Bluff, Hamblett 617 (ENAG, GH,
MO, SEYM)

Comarca del Cabo, Waspan. Nelson 4860
(ENAG, MO, SEYM).

Puerto Cabezas. Marshall & Neill 6565 (B,
BM, DUKE, ENAG, F, FLAS, NY, REED,
SEYM, UC, US), 6557a (SEYM).

Dept. Nueva Segovia, Dipilto. Seymour 6373 (SEYM).

Dept. Boaco, Teustepe. Seymour 2425 (SEYM).

Dept. Chontales, Cuapa. Marshall & Neill 6666 (MO, SEYM).
Juigalpa. Nichols 1636 (SEYM).

Dept. Rio San Juan, San Carlos. Nelson 5334 (SEYM).

Dept. Chinandega, El Viejo. Seymour 2665 (GH, MO,
SEYM).

Dept. Leon, Aranjuez. Hall & Bockus 7961 (SEYM, UCA).
Telica. Dudey, Hamblett & Nichols 212
(SEYM), 213 (SEYM).

Dept. Managua, Masachapa. Nichols 910 (MO, SEYM).

Dept. Masaya, La Concepcion. Nichols 916 (SEYM).

Dept. Carazo, Casa Colorada. Dudey 510 (BM, ENAG,
F, GH, MO, NY, SMU, UC); Seymour 556 (SEYM).
Santa Teresa. Nichols 1310 (SEYM).

Mimosa pusilla Benthham, Bot. Voy. Sulphur 90, 1844.

Leaflets 1-1.5 mm wide. Prickles not only at nodes; some spe-
cimens are relatively spineless or only bristly on parts of some
stems. Angelo.

Nicaragua, Dept. Masaya, Parque Nacional Volcan Masaya.
Neill 2805 (SEYM, UCA).

Mimosa Recordii Britton & Rose, N. Amer. Fl. 23: 170, 1928.
Type: British Honduras, Stann Creek District, Middlesex. S. J.
Record.

Leaflets little more than 1 cm wide; largest leaflets 1-1.5 cm wide. Angelo.

Mimosa resinifera Britton, N. Amer. Fl. 23: 169, 1928.

Leaflets mostly 2-4 cm wide; largest leaflets 2.5-4 cm wide.
Angelo. Guatemala.

Mimosa scalpens Standley, Carnegie Inst. Wash. Publ. 461:58.
1935.

Branches terete to conspicuously 4-5-angulate.

Guatemala, Honduras, Telson & Clewell 0521 (FSU).

Mimosa sesquijugata Donnell Smith, Bot. Gaz. 13: 74, 1888.

Type: Guatemala, Santa Rosa. Tuerckheim 1327.

Mimosa Skinneri Bentham, Lond. Journ. Bot. 5: 85, 1846.

Leaflets 3-6 mm wide. Peduncles 8-45 mm long. Angelo.

Very similar to Mimosa germana.

Type: Guatemala, Costa de Leon, Baja Verapaz (?). Skinner.
Nicaragua, Dept. Nueva Segovia, Dipilto. Seymour 6376.
(SEYM).

Mimosa somnians Humboldt & Bonpland ex Willd, Sp. Pl. 4:
1036, 1806. Leaflets less than 1 mm wide.

Mexico to Paraguay, Fl. Costa Rica 504, 1937.

Mimosa teledactyla Donnell Smith, Bot. Gaz. 56: 57, 1913.

Leaflets 0.5-1 mm wide. Angelo. Guatemala.

Mimosa Velloziana Mart., Herb. Fl. Bras. 185, 1837.

Leaflets 10-15 mm wide. Similar to Mimosa albida.

Costa Rica, Panama.

Mimosa Watsonii Robinson, Proc. Amer. Acad. 36: 473, 1901.

Type: probably Costa Rica, Izabal. Sereno Watson 185323.
Costa Rica.

Leaflets 1-4 cm wide. Angelo. Leaflets mostly 20-35 mm wide.

Mimosa zacapana Standley & Steyermark, Field Mus. Bot. 23:
57, 1944. Type: Guatemala, near Santa Rosalia. Steyer-
mark 29018. Leaflets 2.5-3.5 mm wide.

Neptunia plena (L.) Bentham, in Hooker Journ. Bot. 4: 355,
1841. Leaflets 1-2 mm wide.

Mexico, Guatemala, Panama, W. I., Colombia to Brazil.

Neptunia prostrata (Lam.) Baill., Bull. Soc. Linn.
Paris 1: 356, 1883. Leaflets 1-3 mm wide.

Mexico, Guatemala, Panama, W. I., Colombia, Peru, Brazil;
tropics is eastern hemisphere.

Neptunia pubescens Bentham, Hooker Journ. Bot. 4: 356, 1842.
Leaflets 1-2 mm wide. Louisiana, Mississippi, Mexico
(FLAS), Panama.

Parkinsonia aculeata L., Sp. Pl. 375, 1753.

Leaflets up to 2 mm wide.

Texas, South Carolina, Florida, Tortola, Cuba, Jamaica (FLAS),
Panama, N. South America.

Peltophorum inerme (Roxb.) Naves ex Villar in Blanco, Fl.

Filip. Nov. App. 69, t. 335, 1880.

Leaflets 6 mm wide.

Florida (FLAS), Costa Rica?, Panama.

Pentaclethra macroloba (Willd.) Kuntze, Rev. Gen. 1: 201,
1891.

Pinnae 2 pairs, 20-40 cm long. Leaflets 10-75 pairs, 6 mm
wide. Mexico, Guatemala.

Piptadenia constricta (Micheli & Rose) Macbride, Contr. Gray
Herb. 59: 18, 1919.

Terminal leaflets 11 mm wide (FLAS).

Mexico (FLAS), Guatemala, Salvador.

Piptadenia flava (Sprengel) Benth, Trans. Linn. Soc. 30:371.
1875.

Leaflets 1-2 mm wide. Panama (FLAS).

Pithecellobium albicans (Kunth) Benth, Trans. Linn. Society
30: 592, 1875.

Leaflets 1-2 mm wide. Angelo. Similar to Albizzia caribaea.
Yucatan, British Honduras.

Pithecellobium arboreum (L.) Urban, Symb. Antill. 2:259, 1900.

Glands on petiole and axis of leaves. Leaflets (0.5-) 1-3 mm
wide. Angelo. Leaves much like those of Enterolobium cyclo-
carpum. Honduras, Jamaica, Puerto Rico (FLAS).

Nicaragua, Dept. Zelaya, Comarca del Cabo, Miguel Bikon.
Seymour 5915 (SEYM).

Pithecellobium austrinum Standley & Williams, Ceiba 3: 114.
1952. Costa Rica (FSU).

Leaflets 1-1.5 cm long, 3-4 mm wide. Similar to Pithecello-
bium arboreum. To distinguish them, characters follow:

A. Pinnae 8-16 pairs; leaflets 20-40 pairs, 8-12 mm long, 1-3
mm wide; legume in age coiled or twisted, up to 18 cm long,
up to 1 cm thick Pithecellobium arboreum

A. Pinnae 15-20 pairs; leaflets 15-20 pairs, 1-1.5 cm long, 3-4
mm wide, 3-nerved at base; legume narrowed between seeds,
15-17 cm long, 1.5-2 cm thick; stipe 2 cm long
. Pithecellobium austrinum

Pithecellobium Barbourianum Standley, Contr. Arn. Arb. 5: 74,
pl. 11, 1933. Known from type collection only: Panama,
Barro Colorado Island. Shattuck 237. Leaflets 3-6 mm
wide.

Pithecellobium belizense Standley, Field Mus. Bot. 4: 212,
1929. Type: British Honduras. M. E. Peck 673. Guatemala.

Pithecellobium Bertolonii Benthām, Trans. Linn Soc. 30: 588, 1875. Known from type locality only, Guatemala, Escuintla, Coll. Velasquez.

Pithecellobium Brenezii Standley, Field Mus. Bot. 18: 506, 1937. Costa Rica.

Type: Costa Rica, Entire Rio Jesus y Alto de la Calera San Ramon. Brenes 17135 (F). Similar to Pithecellobium Englesingii Standley but has larger flowers, according to Fl. Costa Rica 18: 506, 1937.

Pithecellobium Brownii Standley, Trop. Woods 18: 30, 1929. Type: British Honduras, Hillbank. C. S. Brown 28.

Pithecellobium carbonarium (Britton) Niezgodā & Nevling, Phytologia 44: 310 & 380, 1979.

Synonym: Albizzia carbonaria Britton, Sci. Surv. Porto Rico & Virgin Islands 6: 348, 1926. Type: C. L. Bates s.n.

Pithecellobium catenatum Donnell Smith, Bot. Gaz. 48: 294, 1909. Terminal pair of leaflets 5-7.5 cm wide. Costa Rica, Panama.

Pithecellobium costaricense (Britton & Rose) Standley, Tropical Woods 34: 40, 1933.

Leaflets 5-10 mm wide. Costa Rica, Panama.

Pithecellobium Donnell Smithii (Britton & Rose) Standley, Field Mus. Bot. 12: 168, 1936.

Synonyms: Pithecellobium Gentlei Lundell, Contr. Univ. Mich. Herb. 6: 28, 1941. Pithecellobium plumosum Lundell, l.c. Pithecellobium Schippii Lundell, l. c.

Leaflets 3-12 mm wide. No gland on petiole. Angelo. Largest leaflets mostly 7-11 mm wide, at tip of pinna. Angelo.

Pithecellobium dulce (Roxb.) Benthām, Lond. Journ. Bot. 3: 199, 1844. Spines straight, slender, not always present. Spines on internodes scarce if any. Gland at summit of petiole often seeming absent. Petiole 1.5-4.5 cm long. Leaflets 1-3 cm wide. Legumes 4-10 cm long, much twisted and curled. Angelo.

Florida (FLAS), Mexico (FSU).

Nicaragua, Dept. Chinandega, Volcan Cosiguina. Neill 7104 (ENAG, FLAS, GH, MO, SEYM).

Dept. Leon, Telica. Dudey, Hamblett & Nichols 213 (SEYM).

Dept. Managua, Apoyeque. Marshall & Neill 6697 (ENAG, F., GH, NY, MO, SEYM).

Esquipulas. Hall & Bockus 7982 (B, BM, GH, MO, NY, OSH, REED, SEYM, SMU, UC, UCA). Masachapa. Nichols 236 (SEYM).

Pithecellobium Englesingii (Standley) Standley, Tropical Woods 34: 40, 1933. Synonym: Inga Englesingii Standley, Tropical Woods 17: 27, 1929.

Nicaragua, northeastern. Coll. F. C. Englesing 205 (YU no. 13297).

Rachis and petiole are covered by numerous warts that I take to be glands. Angelo.

Pithecellobium erythrocarpum Standley, Field Mus. Bot. 12: 168, 1936. Type coll. near Botanic Station, lower Belize River, British Honduras. S. J. Record.

Leaflets 8-30 mm wide, mostly 10-20 mm wide. Angelo.

Pithecellobium Gentlei Lundell, Contr. Univ. Mich, Herb. 6: 28, 1941.

This species "has been confused with P. Donnell-Smithii (B. & R.) Standl." which has floral bractlets linear-lanceolate, at least twice as wide as the filiform-linear bractlets of P. Gentlei. In frt., bractlets of P. Donnell-Smithii do not exceed 5 mm. Those of P. Gentlei become as much as 1 cm long." Treated as a synonym of P. Donnell-Smithii (B. & R.) Standley by Fl. Guatemala, p. 72.

Pithecellobium graciliflorum Blake, Contr. Gray Herb. 52: 69, 1917.

Leaflets 4-10 mm wide. Type. Angelo.

Pithecellobium halogenes Standley, Carnegie Inst. Wash. Publ. 461: 59, 1935.

Guatemala.

Pithecellobium hondurensense B. & R., N. Amer. Fl. 23: 18, 1928. Young twigs pubescent. Stipular spines very short or none. Petiole stout, glabrous, about 2 cm long or shorter, the apical gland oval, cupulate; pinnæ 1 pair; leaflets 1 pair, oblong-lanceolate, 8-11 cm long, 4-5 cm wide, acuminate, lustrous above, reticulate-veined, glabrous, l. c.

Pithecellobium hymenaeifolium (Humboldt & Bonpland) Benth, Hooker Lond. Journ. Bot. 3: 198, 1844.

Leaflets 2-5 cm wide. Panama.

Pithecellobium insigne Micheli in Donnell Smith, Bot. Gaz. 20: 285. 1895.

S. Mexico, British Honduras, Honduras, Fl. Guatemala 5: 75, 1946.

Pithecellobium jinotegense Standley & Williams, Ceiba 3: 115, 1952.

Type: Nicaragua, Dept. Jinotega, E. of Jinotega, Finca Aventina. Standley 10015 (F); duplicate (EAP).

Nicaragua, Dept. Jinotega, Sierra Sialci, S. of Jinotega.

Standley 10441, 10466, 10504; all cited in Ceiba 3: 115, 1952.

Pithecellobium Johansenii Standley, Tropical Woods 16: 47, Dec. 1, 1928. Guatemala.

Pithecellobium keyense Britton ex Coker in Shattuck, Bahama Islands 255, 1905.

This species may be a synonym of Pithecellobium guadalupense Chapman. If not, they are to be distinguished as follows:

- A. Legumes not narrowed deeply between seeds; petioles 1-1.5 mm wide; leaflets leathery Pithecellobium guadalupense Chapman
- A. Legumes more deeply narrowed between seeds; petioles 0.5 mm thick; leaflets papery (chartaceous) Pithecellobium keyense Britton
- Nicaragua, Dept. Matagalpa, Calabasas. Atwood 2567 (ENAG, SEYM).

Dept. Boaco, Teustepe. Atwood 2419 (MO, SEYM, SMU).

Dept. Managua, Esquipulas. Hall & Bockus 7982 (B, BM, FLAS, GH, MO, NY, OSH, REED, SEYM, SMU, TEX, UC, UCA).

Pithecellobium lanceolatum (Humboldt & Bonpland) Benthams, Lond. Journ. Bot. 5: 105, 1846.

Synonyms: *Mimosa ligustrina* Jacq., Fragm. Bot. 29, pl. 32, f. 5, 1801.

Inga lanceolata Humboldt & Bonpland ex Willd. Sp. Pl. 4: 1005. 1806.

According to Fl. Guatemala p. 79, this species "can be separated with certainty from P. pachypus only when legumes are present." Leaflets 14-23 mm wide.

British Honduras, Guatemala, Honduras, Costa Rica, Panama. Nicaragua, Dept. Zelaya, Madregara. Atwood 3050 (SEYM).

Dept. Chontales, between Juigalpa and Santo Tomas. Neill 7300 (BM, FLAS, GH, MO, NY, SEYM, SMU, UCA).

Dept. Granada, Vera Cruz. Hall & Bockus 7828 (REED, SEYM).

Pithecellobium latifolium (L.) Benthams in Hooker Lond. Journ. Bot. 3: 214, 1844.

Terminal leaflets 1.5-6 cm wide, lowest ones much smaller. Honduras (FSU).

Nicaragua, Dept. Zelaya, Limbaikan. Atwood 4879 (BM, ENAG, GH, MO, SEYM, SMU).

Pithecellobium leucocalyx (Britton & Rose) Standley, Field Mus. Bot. 4: 308, 1929.

Leaflets 1-3 cm wide. Angelo. Guatemala.

Pithecellobium leucospermum Brandegee, Univ. Calif. Publ.

Bot. 10: 182, 1922. See Prosopis juliflora for comparison.

Guatemala. We have seen no specimen of this species.

Pithecellobium longifolium (Humboldt & Bonpland) Standley,

Field Mus. Bot. 4: 212, 1929.

Terminal pair of leaflets 1.5-3.5 cm wide; lower ones smaller.

Costa Rica (FLAS, FSU).

According to Fl. Guatemala p. 81, this species is not clearly distinguishable from Pithecellobium Recordii.

Nicaragua, Dept. Chontales, Santo Tomas. Neill 7397 (B, GH, MO, SEYM, SMU, UCA).

Pithecellobium macradenium Pittier, in Contr. U. S. Nat.

Herb. 20: 465, 1922. Known from type only.

Leaflets 1-2.2 mm wide.

Pithecellobium macrandrium Donnell Smith, Bot. Gaz, 40: 3, 1905.

Leaflets 2-4 (7) mm wide. Angelo. Guatemala.

Pithecellobium mangense (Jacq.) Macbride, Contr. Gray Herb. 59: 3, 1919.

Spines may be absent on young branches. Leaflets about 1 mm wide. Panama (FLAS).

Pithecellobium nicoyanum (Britton & Rose) Niezgodá & Nevling, Phytologia 44: 379, 1979.

Synonym: Albizia nicoyana Britton & Rose, N. Amer. Fl. 23: 47, 1928. Costa Rica, Nicoya. Tonduz 13885.

Pinnæ 5-6 pairs. Leaflets 1-2.5 cm long, acute.

Pithecellobium oblongum Benthām in hooker Lond. Journ. Bot. 3: 198, 1844.

Synonym: Pithecellobium microstachyum Standley, Journ. Wash. Acad. Sci. 13: 439, 1923.

Legumes about 7 cm long, much curled. Angelo. Leaflets 3.5 cm wide. Panama.

Pithecellobium pachypus Pittier, Contr. U. S. Nat. Herb. 20: 457, 1922.

Mexico, Guatemala, Salvador.

Pithecellobium palmanum Standley, Field Mus. Bot. 18: 508, 1937. Costa Rica.

Pithecellobium Peckii Blake, Contr. Gray Herb. 52: 71, 1917.

Known from the type only: British Honduras. Peck 738 (GH).

Type specimen examined. Petiole without a gland. Leaflets 1-6 cm wide, typically 3-4 cm wide. Angelo.

Pithecellobium pistaciifolium Standley, Carnegie Inst. Wash.

Publ. 461: 59, 1935. Known from type only: British Honduras, Rio Grande. W. A. Schipp 1260.

Leaflets 5-8 mm wide.

Pithecellobium platylobum (Sprengel) Urban, Sumb. Antill. 5: 360, 1908.

Leaflets 7-15 mm wide. Rachis glabrous or nearly so except at base of pinnae. Legume straight. Angelo.

Pithecellobium plumosum Lundell, Contr. Univ. Mich. Bot. 6: 30, 1941.

Sometimes treated as a synonym of Pithecellobium Donnell-Smithii (Britton & Rose) Standley, q. v. Similar to Pithecellobium Gentlei Lundell. Pithecellobium sophorocarpum may be closely allied.

The conspicuous reticulation of leaflets on lower surface. Only 2 pairs of pinnae. Leaflets larger. These characters distinguish it from P. Gentlei and P. Donnell-Smithii.

Guatemala.

Pithecellobium pseudo-Tamarindus (Britton) Standley, Field Mus. Bot. 4: 212, 1929.

Leaflets almost 2 mm wide.

Pithecellobium racemiflorum Donnell Smith, Bot. Gaz. 56: 57. 1913.

Known from type locality only. Costa Rica, Las Vueltas, Tucurrique.

Pithecellobium Recordii (Britton & Rose) Standley, Field Mus. Bot. 4: 212, 1929.

Type: Andes Region. S. J. Record 5.

According to Fl. Guatemala p. 81, Pithecellobium Recordii is not certainly distinct from Pithecellobium longifolium.

British Honduras, Guatemala.

Pithecellobium Saman (Jacq.) Benthams, Lond. Journ. Bot. 3: 216, 1844.

Leaflets 2 cm wide.

Guatemala, Panama, Jamaica, Tinian, Mariana Islands (FLAS), Costa Rica (FSU).

Nicaragua, Dept. Matagalpa, Laguna Moyua. Neill 7217 (SEYM, UCA).

Dept. Granada, Isletas de Granada. Seymour & Neill 6603 (ENAG, MO, SEYM).

Pithecellobium saxosum Standley & Steyermark, Field Mus. Bot. 23: 163, 1944. Guatemala.

Nicaragua, Dept. Matagalpa, Sebaco. Seymour 2537 (B, BM, F, FLAS, GH, MICH, MO, NY, SEYM, SMU, UC, WDP).

Pithecellobium Schippii Lundell, Contr. Univ. Mich. Herb. 6: 31, 1941.

Allied to Pithecellobium Donnell-Smithii and P. tenellum.

Differs from P. Donnell-Smithii in having leaflets puberulent over both surfaces. Differs from P. tenellum in having small-

er leaflets and slender bractlets. British Honduras.

Pithecellobium sophorocarpum Benth in Benth & Hooker
Gen. 1: 598, 1865. For description, see N. Amer. Fl. 23:
31, 1928

Leaflets 5-10 mm wide. Midrib hairy beneath, less so above,
otherwise essentially glabrous. Angelo.

Pithecellobium Stevensonii (Standley) Standley & Steyermark
Field Mus. Bot. 23: 164, 1944.

Type from British Honduras, Freshwater Creek, Stevenson
65. Guatemala.

Pithecellobium tenellum (Britton & Rose) Standley, Field Mus.
Bot. 12: 216, 1931.

Leaflets 7-20 mm wide. Angelo. British Honduras.

Pithecellobium Tonduzii (Britton & Rose) Standley, Field Mus.
Bot. 4: 308, 1929.

Leaflets 1.5-2 cm long, oblong or lance-oblong.

Guatemala, Volcan de Pacaya. Tonduz 450, Type.

Pithecellobium Tuerckheimii (Britton & Rose) Standley & Steyer-
mark, Field Mus. Bot. 23: 164, 1944.

Leaflets about 1 mm wide. Petiole and rachis with numerous
stipitate glands. Angelo.

Type: Guatemala, Coban. Tuerckheim II. 1769.

Pithecellobium Valerioi (Britton & Rose) Standley, Field Mus.
Bot. 18: 509, 1937.

Synonym: Pithecellobium Standleyi (Britton & Rose) Standley
Field Mus. Bot. 18: 509, 1937.

Terminal pair of leaflets sometimes 6 cm wide.

Costa Rica, Panama.

Pithecellobium vulcanorum Standley & Steyermark, Field Mus.
Bot. 23: 164, 1944.

Leaflets 3-5 mm wide. Angelo. Flowers unknown.

Guatemala, Honduras, Salvador.

Pithecellobium Zollerianum Standley & Steyermark, Field Mus.
Bot. 22: 343, 1940.

Type: Guatemala, Volcan de Tajumulco, above Finca Porwenir,
Steyermark 37440.

Prosopis juliflora (Sw.) DC., Prodr. 2: 447, 1825.

Synonym: Prosopis chilensis (Molina) Stuntz, U. S. Bureau In-
dustry 31: 85, 1914.

Leaflets 1-5 mm wide. Legumes septate, not opening.

Flowers in spikes. Similar to Pithecellobium leucospermum
which has flowers in dense heads.

Mexico, Jamaica, Puerto Rico.

Nicaragua, Dept. Leon, Puerto Somoza. Neill 6636 (BM,
ENAG, GH, MO, NY, SEYM, SMU, UC).

Nicaragua, Dept. Managua, Tipitapa. Seymour 3448 (BM,
ENAG, F, GH, MO, NY, SEYM, SMU, UC).
Schizolobium parahybum (Vell.) Blake, Contr. U. S. Nat. Herb.
20: 240, 1919.

Leaflets 4-7 mm wide.

Costa Rica, Panama, Brazil (FLAS).

Nicaragua, Dept. Granada, Volcan Mombacho. Atwood & Neill
1562 (FSU).

Schrankia hamata Humboldt & Bonpland ex Willd., Sp. Pl. 4:
1042, 1806. Panama.

Schrankia leptocarpa DC., Prodr. 2: 443. 1825.

Leaflets 1-2 mm wide. Guatemala, Costa Rica, Panama.

Nicaragua, Dept. Zelaya, Puerto Cabezas. Nelson 4470 (GH,
MO, SEYM, SMU).

Tamla. Robbins 5934 (SEYM).

Stryphnodendron excelsum Harms, Repert. Sp. Nov. 19: 64,
1923.

Leaflets 8-10 mm long. Angelo.

Costa Rica; not known in Panama but to be expected there.

Excluded species

Pithecellobium fragrans Benthham in Hooker Lond, Journ. Bot.
3: 220, 1844.

British West Indies, Fawcett & Rendle Fl. Jamaica.

Doubtfully in Central America. Fl. Panama, Ann. Mo, Bot.
Gard. 37: 247, 1950.

Occurrence in Central America not confirmed.

ABBREVIATIONS in addition to those in common use.

B. & R., Britton, N. L. & J. N. Rose

Bth., Benthham

C. & S., Chamisso & Schlechtendal

ENAG, Herbarium of Escuela Nacional de Agricultura y Gana-
deria, Managua, Nicaragua

H. & B., Humboldt & Bonpland

Illustr., Illustration or Illustrated

S. A., South America

SEYM, Herbarium of Frank C. Seymour

Stan., Paul C. Standley

St. & St., Standley, Paul C. & Julian A. Steyermark

UCA, Herbarium of Universidad Centro-Americana, Managua,
Nicaragua

WDP, Herbarium of St. Norbert College, West De Pere, Wis.

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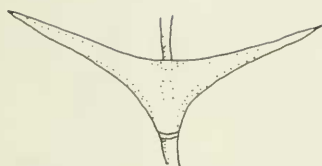
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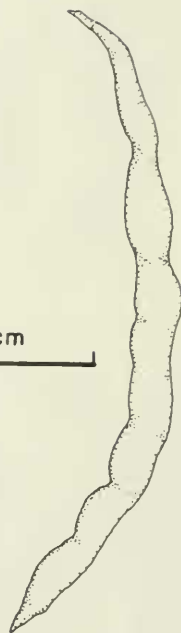
Caesalpinoideae, Part 5, Fasc. 3, 1957.

*ACACIA Hindsii*

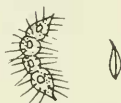
3 cm

*ACACIA Farnesiana**ACACIA cornigera*

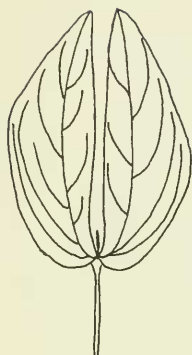
3 cm

*ACACIA tortuosa*

MIMOSA pudica



MIMOSA hemiendyta

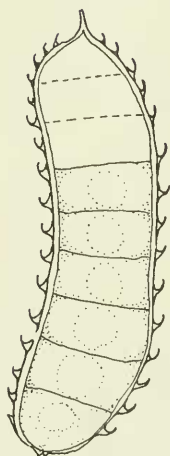


3 cm

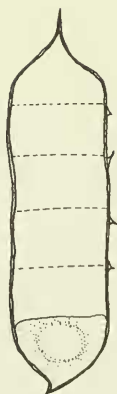
MIMOSA albida



MIMOSA pigra



MIMOSA hondurana



MIMOSA hondurana

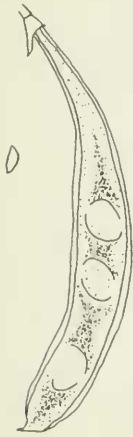


3 cm

CALLIANDRA
capillata

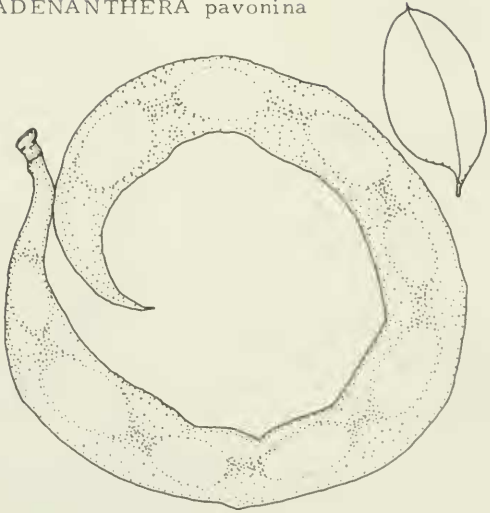
CALLIANDRA
grandiflora

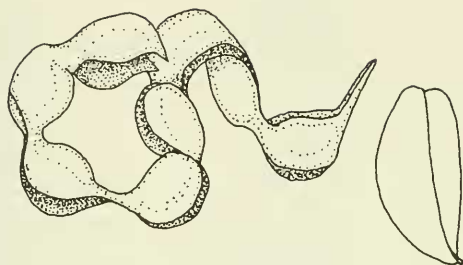
CALLIANDRA
portoricensis



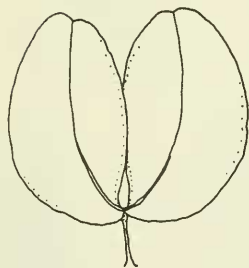
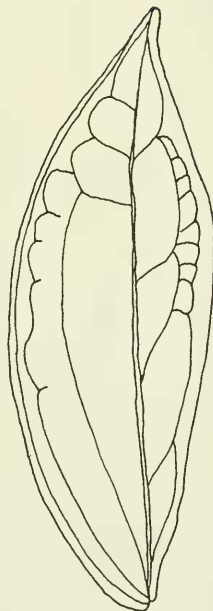
3cm

ADENANTHERA pavonina

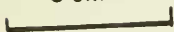




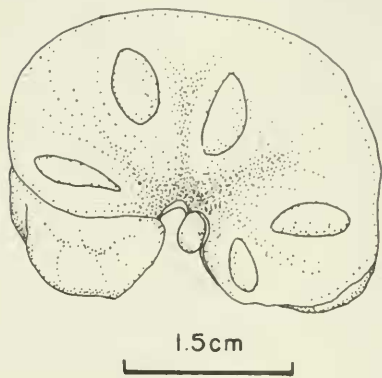
PITHECELLOBIUM dulce

PITHECELLOBIUM
dulceCALLIANDRA
rhodocephala

3 cm

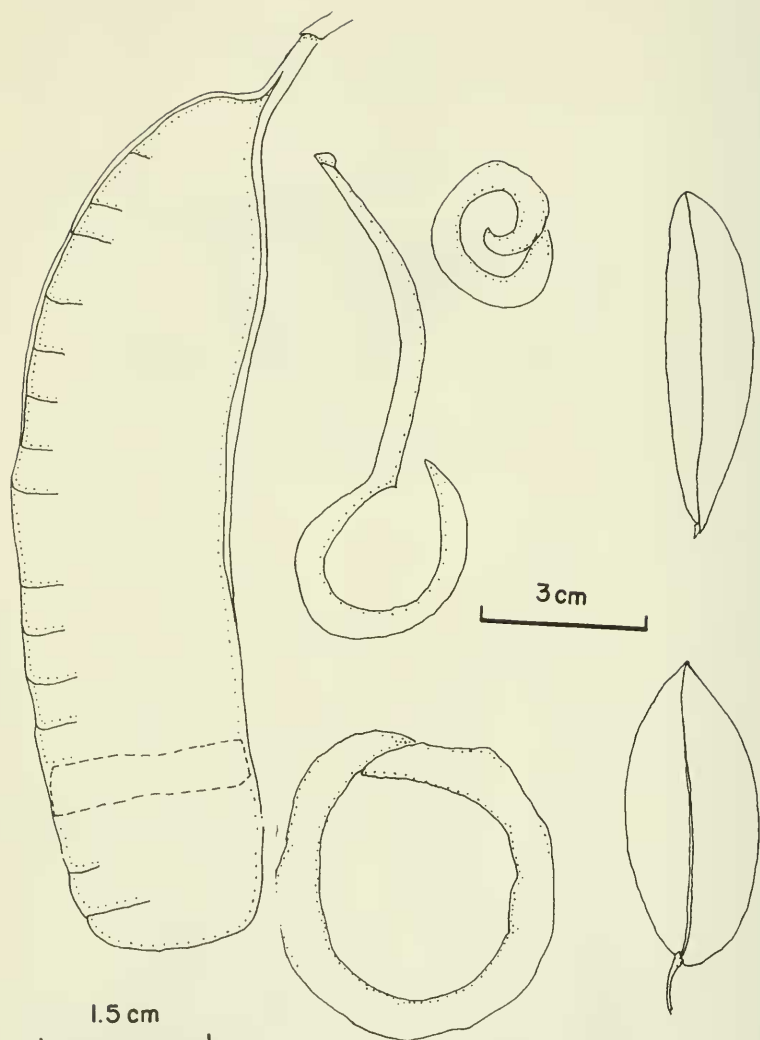


ENTEROLOBIUM cyclocarpum



PITHECELLOBIUM austrinum

DESMANTHUS virgatus



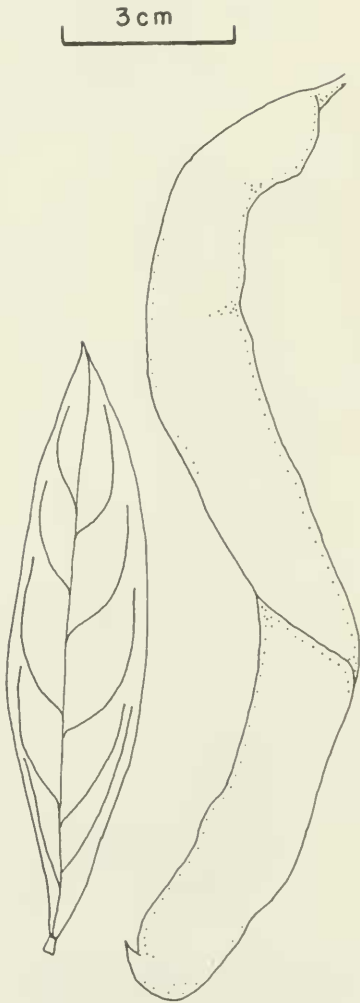
PITHECELLOBIUM
lanceolatum

ENTADA polystachya

PITHECELLOBIUM latifolium

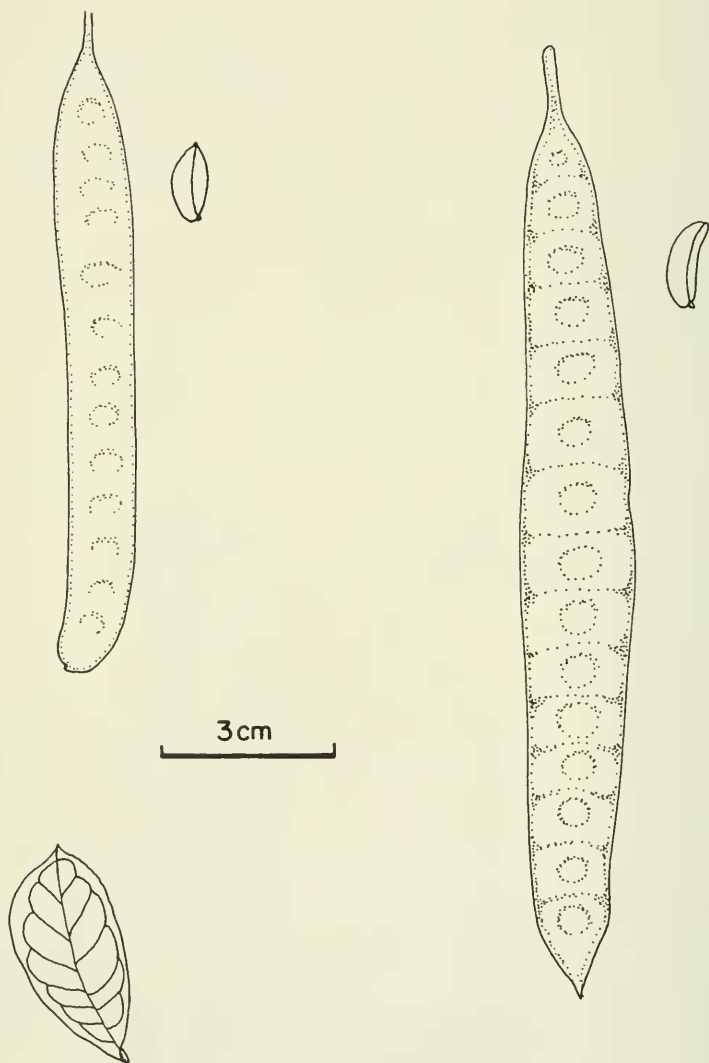


PITHECELLOBIUM longifolium

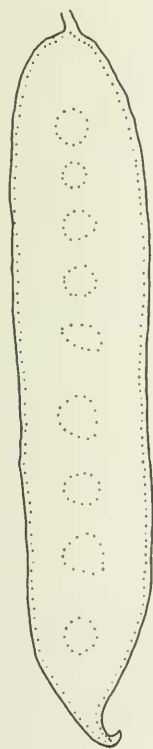


LEUCAENA Shannonii

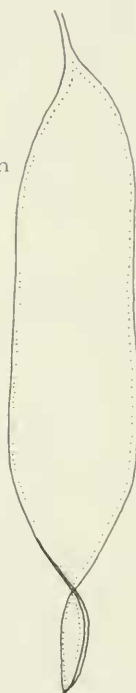
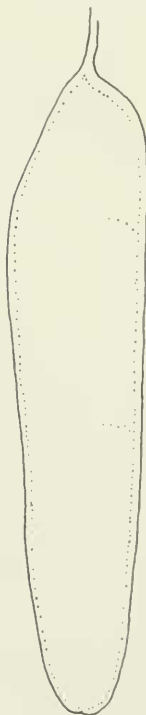
LEUCAENA latisiliqua



PITHECELLOBIUM Saman

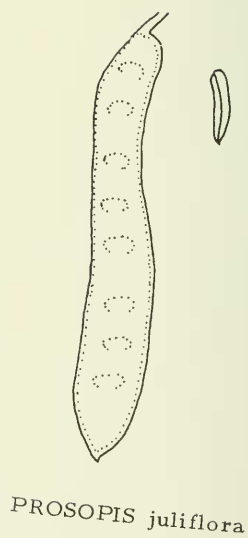
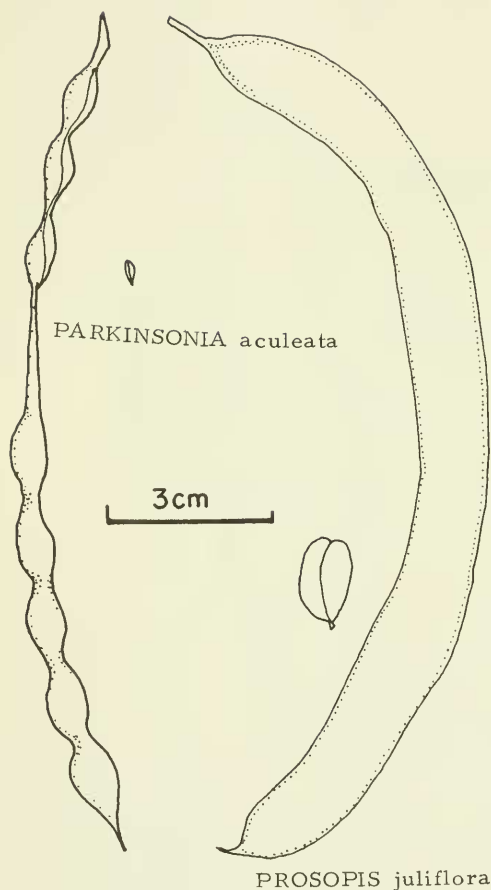
*LYSILOMA acapulcense**ALBIZZIA* Lebeck

1.5cm

LYSILOMA
multifoliolatum

3cm

LYSILOMA
bahamense



PARKINSONIA aculeata

CAESALPINIA
vesicaria



3 cm



CAESALPINIA
pulcherrima



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